DOCUMENT RESUME

ED 062 520 08 VT 015 020

AUTHOR Daugherty, Ronald, Comp.; And Others
TITLE Proceedings of the National Seminar for State Directors of Community-Junior Colleges (January 10-11, 1972). Final Report.
SPONS AGENCY American Association of Junior Colleges, Washington, D.C.; Ohio State Univ., Columbus. Center for Vocational and Technical Education.
REPORT NO LT-Ser-36
BUREAU NO BR-7-0158
PUB DATE Mar 72
GRANT OEG-3-7-000158-2037
NOTE 134p.

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS *Articulation (Program); *Career Education; *Community Colleges; Conference Reports; Curriculum Design; Educational Trends: Information Systems; *Junior Colleges; *Leadership Training; Models; Post Secondary Education; Program Administration; Program Development; Secondary Education; Seminars; State Programs; Traffic Safety; Vocational Education

ABSTRACT

This 3-day seminar was specifically designed to acquaint state leaders with those trends in occupational education having direct and indirect implications for the post-secondary level and to provide a forum for identification and discussion of problems. Thus, 49 participants met and responded to presentations on the following topics: (1) "Improved Communications in State Administration of Vocational Education" by S.V. Martorana, (2) "Communications With the State Department of Vocational Education and Community-Junior Colleges" by J. E. Snyder, (3) "Secondary Schools and Community-Junior Colleges Vocational Education Articulation" by F.D. Lillie, (4) "Occupational Education Program Articulation Between the Community College and Baccalaureate Levels" by L. W. Bender, (5) "Articulation Between the Proprietary School and Public Schools" by W. Goddard, (6) "Career Education and the Community-Junior College" by R. Worthington, (7) "Career Education--An Educational Concept" by K. Goldhammer, (8) "School Based Comprehensive Career Education Model" by B. Reinhart, (9) "Comprehensive Information System for Occupational Education" by P.V. Braden, (10) "Highway Safety" by R. Daugherty, and (11) "Occupational Information for Curriculum Design and Revision" by F. Pratzner and J. Joyner. (JS)

ED 062520

PROCEEDINGS OF THE

NATIONAL SEMINAR FOR STATE DIRECTORS of COMMUNITY - JUNIOR COLLEGES

JANUARY 10-11, 1972

VT015020

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

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The Center for Vocational and Technical Education, an independent unit on The Ohio State University campus, operates under a grant from the National Center for Educational Research and Development, U.S. Office of Education. It serves a catalytic role in establishing consortia to focus on relevant problems in vocational and technical education. The Center is comprehensive in its commitment and responsibility, multidisciplinary in its approach and interinstitutional in its program.

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- Conducting research and development to fill voids in existing knowledge and to develop methods for applying knowledge.
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LEADERSHIP TRAINING
SERIES NO. 36

PROCEEDINGS OF THE NATIONAL SEMINAR FOR STATE DIRECTORS OF COMMUNITY–JUNIOR COLLEGES JANUARY 10–11, 1972

[Conducted in cooperation with the American Association of Junior Colleges]

COMPILED AND EDITED BY

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MARCH, 1972

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A FINAL REPORT
ON A PROJECT CONDUCTED UNDER
PROJECT NO. 7-0158
GRANT NO. OEG-3-7-000158-2037

The material in this publication was prepared pursuant to a grant with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
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PREFACE

As a result of the rapid growth in community-junior colleges and significant increased interest in post-secondary occupational preparation programs, critical problems have evolved concerning increased enrollments, limited resources and other related educational concerns. State Directors of community-junior colleges have expressed need for leadership assistance which would help them in initiating needed developments to meet contemporary problems in post-secondary occupational preparation programs.

As one means of meeting this expressed need, The Center for Vocational and Technical Education at The Ohio State University, in cooperation with the American Association of Junior Colleges, sponsored The National Seminar for State Directors of Community-Junior Colleges in Columbus, Ohio, on January 10-11, 1972. Participants at this seminar included state level personnel associated with community-junior college administration, vocational and technical education, and higher education. The American Vocational Association, the National Advisory Council for Vocational Education, and the United States Office of Education were also represented.

This publication presents the formal papers and a synthesis of the comments and recommendations offered by the conference participants. Topics covered include communications in state administration of vocational education, program articulation, career education, and critical issues in leadership development.

The assistance of the American Association of Junior Colleges is gratefully acknowledged. A special word of appreciation is due to the National Council of State Directors of Community-Junior Colleges and especially to its officers, S. V. Martorana and Lee Henderson, for their assistance in planning this Seminar. Center staff members Ronald Daugherty, Seminar Director, Research Associates Gus Korb and Anne Hayes, and Darrell Ward, Project Coordinator, are also acknowledged for the leadership they provided in the planning and conduct of this Seminar.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

INTRODUCTION

Greater emphasis has currently been placed on the role of the comprehensive community college in terms of meeting community educational needs on the post-secondary level. Included in this role are the following specified functions which the comprehensive community-junior college serves: (1) the transfer functions, (2) the general education function, (3) the vocational-technical function, (4) the adult education function, and (5) the community service function. This seminar, however, was limited to the state leadership role in relation to the vocational-technical function.

The seminar was specifically designed to acquaint the state leaders with trends in occupational education having direct and indirect implications for the post-secondary level and in providing a forum by which the directors could identify and discuss the more pressing problems in post-secondary occupational education.

Specific objectives of the seminar were:

1) To provide a forum for identifying, defining, and discussing critical issues in community-junior colleges occupational education.

2) To examine current development and trends in vocational education which have implications for community-junior colleges.

3) To explore needed additional action to solve identified problems.

The report is arranged in five parts and includes 11 papers on topics identified for discussion. These topics were:

Part I: Communications in State Administration of Vocational Education

Part II: Program Articulation

Part III: Career Education

Part IV: Research and Development Reports

Part V: Critical Issues in Leadership Development for Occupational Education in the Community-Junior Colleges

The 11 position papers were developed and presented to the conference by prominent leaders in the areas of vocational education and community-junior college administration. Also incorporated into the conference--and reported in these proceedings--were six discussion groups reacting to the formal presentations.

A complete listing of project staff, conference participants, discussion leaders, conference reporters, position paper authors, and a complete conference schedule will be found in the appendices of this publication.

Darrell Ward, Coordinator
Product Utilization and Training

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PART I

Communications in State Administration of Vocational Education

Session Chairman

Carrol deBroekert

IMPROVED COMMUNICATIONS IN STATE ADMINISTRATION OF VOCATIONAL EDUCATION

By: S. V. Martorana*

It is good to be among friends and away for a brief time from the firing line of community college operations in New York State. I should say when I realized that our presentations were going to be evaluated at this conference, Ron, I went back and read the correspondence that occurred late in November inviting me to present this paper. I read very carefully to see if there was any fine print that I had missed in the first reading, and I failed to see anything that referred to evaluation. So let me say, rather than back out on the contract at this late date, all I ask is that if I pass the evaluation well, Ron, someone will report back to my boss, but if I flunk it, give the report to me.

The instructions that were given me by the program planning committee of this conference when I accepted this invitation was that I should organize my comments into three main divisions. First, definition of the problem in communications in state level administration of vocational and occupational education and of its significance to the effective operation of community colleges. Second, comment on the relevance of "known and proven approaches in research and development" in addressing the problem of communications and improving state level administration of community college occupational education. And thirdly, advancement of suggestions, particularly for state directors of community colleges, for resolution of the problems identified. I will use that three-point arrangement in the presentation of my remarks.

In order to have broader perspective on which to base my comments today, I wrote to a selected number of college state directors and requested them to present to me a description of the condition of communication in state level administration in their particular state. Letters and other material from 10 states were available in time for use in preparing this paper. This number includes my own state. I will draw heavily on the views expressed by the state directors in their letters in my organization and presentation of this position paper. The nine states replying

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*Dr. S. V. Martorana is Vice Chancellor for Two-Year Colleges, State University of New York.

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early were Arizona, California, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, North Carolina and Virginia. So you see, these together with my own state, New York, for which I feel I can speak, provide a 20 percent sample of the 50 states in the nation and a much larger sample of states which have well developed systems of public two-year community and junior colleges.

The group, moreover, includes states which represent the gamut of arrangements at the state level for administering community colleges. There are, for example, three in the 10 which have separate state level coordinating boards for community colleges: Arizona, California, and Maryland. There are three which have separate state level boards which govern the community colleges: Massachusetts, Minnesota, and Virginia. There are two which place state level administrative responsibility for community or junior colleges in the state board of education: Iowa and North Carolina. And there are two which have the community colleges affiliated with the state level system of higher educational university systems: Kentucky, in which case the state university is in direct controlling authority over the junior colleges, and my own state, New York, where the community colleges are locally governed, but where the board of trustees of the state university by law, is responsible for statewide coordination, planning and supervision of the two-year colleges.

I must say in passing, that a reply was received from Illinois but too late for inclusion in this report. I may be able to insert some observations from that letter into my remarks as I move along, but I did not have it in time to organize its contents directly into my analysis.

As I said, I shall call heavily on the experiences and substantive responses of these 10 states to the question of state level communications on occupational education in organizing and presenting my comments.

Your attention will be called to some interesting differences, I think in the points of view held by state directors on the matter of communications and state level administration of vocational education in the community colleges in relationship to the nature of the organization in which they work. Clearly, it will be seen that the structure for state level administration of community-junior colleges in general makes a difference in the way communications are conducted. The question becomes then: "Can or should the structure be changed in directions to make communications easier?" or "Should some better methods for communication be developed which can be fit into the structure that already exists?" I hope to clarify these two questions as we move ahead.

Before delving into a discussion of these questions further, however, let us take a few minutes to note why this whole topic

is a real and very important problem in state level administration of public two-year colleges by whatever name is applied to them--community colleges, technical institutes, junior colleges, or whatever. All of you, I am very confident, most of you being state directors of these institutions, are well aware of what I am about to point out because you are living with the dynamics of community college education from day to day.

For the record, and to set the stage for a later discussion today and throughout the conference, however, I think it would be fair to say that this matter of state level administration of vocational education in community colleges is one of the top two or three problems confronting these colleges today. I would place the problem in this high category along with such other challenges as the getting of adequate finances to operate and house these institutions and the problem of improving the involvement of faculty and students and extending their participation in the governance of these institutions.

Why is communication in state administration of vocational education in the community colleges so important? I think for several reasons. One is the strong and growing commitment in community and junior colleges to provide students with relevant programs of education and training that will give many of them a real chance to enter the world of work directly after college attendance, an opportunity for which many young people and older ones, too, are developing a new awareness and appreciation in these days of national economic depression. Vocational education is becoming increasingly a post high school educational function and the community-junior colleges, more than any other part of the formal educational structure in the United States, are delivering needed services in post high school vocational and technical education and training. In New York State some 60 percent of the enrollment in the 44 public two-year colleges is in programs organized to prepare the individual to go directly to work after completing the program in the two-year college. And this percentage has stayed quite steadily at that level over the past five years.

Another reason for the importance of communications is the tremendous effort needed to maintain progress in the community and junior colleges toward developing sound vocational education. Success in this realm does not come easily. The task is beset with many problems. U.S. Commissioner of Education Sydney Marland, I think, deserves a vote of commendation from us for the campaign he has launched against one of the problems--the generally negative public image of vocational education. His campaign to alert public attention to the need for occupational education and to change public attitudes more positively toward this type of education is certainly to be commended.

Another reason is the high cost of post high school vocational education and I am speaking from the heart now from New York State as well as observations of other states. In a time of great difficulty in gaining public support for operating budgets, equipment and capital facilities, the community colleges need to be able to tap all available resources that can provide more dollars to help maintain these programs.

Communications in state administration of community college vocational education then is a large problem and a very significant one for at least two big reasons--first, it involves a large and important segment of the program offered by these colleges; and second, it involves means and ways of getting better financing for this large program commitment.

The General Problem

With these general observations as background, perhaps we can turn to more specific examination of the topic. According to the descriptions provided by the 10 states which I am using as a basis for my paper, the general problem of state level communications centers almost entirely on the workings of the Federal Vocational Education Act and involves the relationships of the state board for vocational education under that act with other state boards and agencies interested and concerned with community college operations in the several states.

Four sub-problems from that general problem are worthy of note. First, the conflict, or potential conflict, over the issue of what state agency is in fact responsible for occupational education in the community college. Second, the lack of participation in the development of the state plan for vocational education required by the Federal Vocational Education Act.

Third, the differences in status and attitudes toward communication and the related involvements concerning program matters from those pertaining to fiscal matters in state administration of vocational education. There is a significant separation and different attitudes prevail among state boards in their roles and interactions as opposed to fiscal decisions and operations. And, further, the lack of definite organizational and structural or other formal arrangements that could facilitate and enhance communications among different state level agencies interested in community college vocational education.

Let me elaborate briefly on each of these sub-problems.

Conflict over Control

The problem of conflict or potential conflict over operative control of vocational education flows from the fact that the federal act requires a single state agency to be the state board of vocational education. When this agency is one other than the one which by state law is responsible for state level administration of the community colleges, the conflict possibilities emerge. This difficulty is very well described in a letter I received from Sidney W. Brossman, Chancellor of the California Board of Governors of Community Colleges, and I would like to read two paragraphs from his letter. He says:

> The issue is the location of responsibility at the state level for vocational education in the California community colleges. The statutes which created the Board of Governors of the California Community Colleges in 1967 gave the board all "duties, powers, purposes, responsibilities and jurisdiction; heretofore, vested in the State Board of Education, the Department of Education, and the Director of Education with respect to the management, administration, and control" of the community colleges. The Board of Governors is required to approve all educational programs offered by the community colleges, including curricula in vocational education. Because of the federal law, however, requiring a single state agency, the Board of Education is still the statewide board for vocational education.
>
> The problems created by this shared responsibility at the state level for vocational education programs in the community colleges are in the first instance fiscal and the state board (for vocational education) makes allocations to both secondary schools and the community colleges. The problems are also educational in that a single state plan for vocational education has been developed for federal approval which encompasses both secondary education and the community colleges.

The letters from Maryland and Virginia also reflected concern about this issue, and I must report that it rears its ugly head from time to time in my own state of New York.

Development of the State Plan

The current mode of participation in the discussion and background deliberative work that goes into state plans for vocational education required by the federal act is a matter of concern,

apparently, to all state directors of community colleges, except those under state boards of education. Among the 10 described, six complained strongly about the nature of communications involving the development of the state plan now. Two, Kentucky and Massachusetts, among the 10 I referred to, were vague on this point and two, Iowa and North Carolina, both under state boards of education, seem satisfied with their state arrangements and procedures.

Some of you may be amused, but others of you, I am sure will wince at the accuracy of the words that were used to describe the situation by Chancellor Dana Hamel from "the great commonwealth of Virginia." He said with respect to the Virginia Community College System:

> We are invited, of course, to review the state plan for vocational education after it is all drawn up and inevitably it is presented to us within 24 to 48 hours before it is due in Washington. This, of course, precludes any opportunity for us to make meaningful suggestions.

That is not much different from the situation in New York State, I am sad to have to report.

Separation of Fiscal from Program Matters

It is interesting to notice that the state level communications concerning community college vocational education are much closer on program matters than on fiscal decisions. The agency and staff responsible for state administration of the federal act seem generally much more agreeable involving other agencies in curriculum and program reviews and approvals than they are in deciding on allocations of federal dollars or other fiscal operational decisions. If one were to yield to the temptation to be bitter, one might be tempted to say they are not reluctant to get help in doing the work, but they are somewhat reluctant to permit assistance in the fiscal decisions that flow from the work done.

The community college state directors' sensitivities on this score are reflected from these two quotations. First, from Arizona, John T. Condon, Executive Director, State Board of Directors for Community Colleges in Arizona, writes as follows:

> Communications involving direct fiscal planning and grant management is between the individual college district and the Division of Vocational Education of the State Board of Education through the supervisor for community college vocational-technical programs.

In another paragraph he goes on to show a heavy involvement of his own office, much of which is not derived from the law, in program review and approval. From Maryland, a staff member of the Maryland State Board for Community Colleges writes:

> Communications between the division (of vocational education) and this office relating to fiscal and grant management is limited, for the most part, to our being informed of actions taken by the division involving the community college.

His letter then goes on to elaborate in several paragraphs the weaknesses that this causes in operational effectiveness.

You may find it interesting, as I did, that the Minnesota State Board for Junior Colleges has decided it will seek federal money only for certificate or diploma programs. None is sought for an associate degree technical occupational program. The reason for this very important policy decision is the realization and the belief on the part of the junior college board that the fiscal advantages of use of the Federal Vocational Education Act to help support the technical programs fail to offset the program and operational disadvantages that would arise. If it were to seek money for the technical programs as well as certificate and diploma programs the State Junior College Board would have to accept procedures for program reviews and other operational measures set by the state vocational education board. This compilation in administrative management of the junior college programs is seen in such a way as to cause the state junior college board to forego the availability of federal dollars for those programs.

Lack of Formal Guarantees

Perhaps these difficulties in communications exist because the state agencies simply have not been able to formulate mutually acceptable formal and clearly established structural management to guarantee better results. Or perhaps these arrangements can be conceptualized, but for various reasons cannot be made acceptable to all who must say yes to their adoption.

The plain fact seems to be that the only generalization possible from current practice is that typically the "system," to the extent that it operates well at all, depends heavily on personal relationships at both staff and board levels, <u>not</u> on the format of operations or structure of the system itself. Of course, reliance of personal goodwill and cordial understandings can be very helpful. Indeed it is a sine qua non for administrative relationships to work successfully and productively. Massachusetts is an excellent illustration of this principle; there the situation was made a few years ago, but now personalities have shifted and

the personal relationships have been worked out with mutual acceptance to the point where the system is working very well, I am told. Nonetheless, while this reliance on personal relationships can be very helpful, it obviously produces unreliable results from year to year, both in a given state and between states.

Only four of the 10 states that I am using as a basis in this paper have formal arrangements to improve communications. And of these four, two (Iowa and North Carolina) have the community colleges under the state board of education which is also the state board for vocational education under the federal act.

Arizona has a special structure for communication at the board level in the form of an interlocking board membership. Its effectiveness is described by Dr. Condon in this fashion. He says:

> A line of communication that can be used and is established by law, is that the Superintendent of Public Instruction who is the administrative head of the Board of Vocational Education and the Director of the Division of Vocational Education are ex-officio members of the State Board of Directors for Community Colleges. A member of our community colleges board is also a member of the board of education. The communication channels provided by these positions provide good and adequate channels between boards and the respective state director.

I would ask John though, "How come, if the Director of Vocational Education is a member of the Community College Board, he, as the executive head of the community colleges is not also a member of the Board for Vocational Education?" It may be that this actually is the case because the response was not complete on that particular question. Therefore, the question should be asked.

California, the fourth of the four states that has a formal arrangement, has a joint committee of personnel involving the state board of education, serving as the federal vocational education board, and the Board of Governors for the Community Colleges. Chancellor Brossman describes the effectiveness of the joint committee in these words:

> Through mutually adopted resolutions by the Board of Governors and the State Board of Education, a Joint Committee on Vocational Education was established in July, 1968, with equal membership from both boards, 'to coordinate the total statewide program of federally-aided vocational education by advising the state board with regard to policies, procedures, fund allocations, staffing responsibilities, planning and program development.

The joint committee's recommendations are based on the agenda items brought to it by my staff and the state board staff.

While the joint committee and its administrative coordination tends to make a smooth coordinated operation, the basic issue of the board of governors being responsible for the total educational program in the community colleges is still not resolved. The responsibility is still a shared one.'

All of you may be interested in noticing that not a single state of the 10, on which I am basing this paper, made mention of the State Advisory Council, now statutorily required by the Federal Vocational Education Act. This cannot be viewed as just a simple oversight. At the present time, it appears the intent of the Congress in requiring such an advisory council seems to be unfilled, at least in some states.

Possible Research and Development Approaches

Now to the next main part of my presentation--that relating to research and development approaches relevant to the problems of communication in state level, community college occupational education. Search as I would, in the literature in the month and a half that I had to prepare this paper, I could find nothing in relatively recently published literature, that reported analytical research efforts directed at an examination of the effectiveness or lack of effectiveness of communication in the state level administration of occupational education in community colleges.

This is surprising to me, for it would seem that the hot debate over the amendments in the 1963, 1965, and 1968 amendments to the federal act would have attracted the scholarly attention of our colleague researchers in the university centers throughout the country. The debate pitted the views of the American Association of Junior Colleges, the American Vocational Association, and the officials in the U.S. Office of Education as to the things that ought to be done to improve communications by putting new requirements into the law. These propositions, it would seem to me, could be turned into hypotheses for research, and some studies that would be very helpful would flow from that fact. One would hope that by the time the next round of debates come up, when the amendments come up again, we will have more sound research from which to draw.

In this connection, we ought to mention the problem of data gathering in community college level vocational education. Although not specifically a means of communication, statistical facts

are the essence of good communication and sound administrative decision. One of the sad by-products of the often tangled structure for state administration of community-junior colleges in vocational education is the virtual nonexistence of good data on this subject. We cannot get such needed information at the state level in most states. We cannot get it at the federal level.

Both in the area of research and in that of better data gathering, we might look for help to our hosts for this conference--The Center for Research and Development here at The Ohio State University and the American Association of Junior Colleges. Perhaps together, these three organizations--The AAJC, the National Center, and the National Council of State Directors, working together, may be able to launch some better research effort and simultaneously, lay the groundwork for better data gathering. This would help us greatly in our daily tasks back home.

Some Suggestions

What suggestions can be put forward for possible improvement of communication and state administration of vocational education in the community colleges? Several are evident from the exchange of correspondence conducted preliminary to my preparing this paper and further from some broader observations of my own of states over the nation. On one possible approach there seems to be strong negative consensus--nobody seems to agree with it, no one seems to favor it. This would be the simplistic solution of creating a separate board, distinct and autonomous from all other state boards in a given state and with sole but complete responsibility for vocational education in the state. California presents the widely and strongly held negative view on this possible action in this word.

> The Board of Governors of the Community Colleges and the State Board of Education are uniformly opposed to a third, separate board for vocational education.

Another suggestion may be recognized from the positive views expressed concerning ease of communication in their states and in the sense of satisfaction with current practices in state administration reported by Iowa and North Carolina. Since these two states both have community colleges under the same state board as that designated to serve as the federal vocational education board, the questions, in fairness, have to be asked. I think: Is the reported success in operations due to the structure?; and, If it is, can and should the structure be replicated in more states? The contents of the report from Iowa and North Carolina suggest that the answer to the first question is "Yes." Having the community colleges and public secondary education all under a common

state level board does facilitate communication concerning vocational education and shows efficiency in administering programs concerned with vocational education.

But other research clearly casts a block in the path of this kind of thinking. The answer to the second question, that is: Should and can this pattern be replicated in more states?, clearly seems to be "No." The several recent research reports by James L. Wattenbarger at the University of Florida, the research conducted and the related reports of the Carnegie Commission on Higher Education, and others show clearly that the trend in state level administration of community colleges is away from use of state boards of education as the responsible state agency, not toward this pattern.[1]

What about another variation on this possible theme of a common state board; that is, the single state board responsible not for all aspects of public secondary and community college education but for only vocational education in the secondary school and for all aspects of operation at the community college level. This kind of a board exists now in Colorado. Something approaching it in some respects is emerging in Washington in recent developments, and in Wisconsin with respect to this state's system of area schools of adult and vocational education. As I said earlier, there is no research or evaluative studies available on which to judge the relative effectiveness of these unusual approaches. We need many such studies before any firm positions of support or criticism can be taken.

On the balance of current reality of operations among most states, and recognizing that the number of state boards for community-junior colleges separate from boards responsible for secondary education is increasing, California's approach of a joint committee for vocational education seems to hold most promise. Maryland reports that it is now moving toward such a joint committee for program evaluation. It should be noticed, however, that this planned change is again, only for purposes of program evaluation, not for broadening the base of fiscal decisions and other related matter.

But the establishment of joint, inter-board committees, even if deemed a logical and desirable approach to improved state administration of vocational education and related communications, cannot be expected to emerge easily. In the first place, the very

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[1]James L. Wattenbarger and Melvyn Sakagucki, *State Level Board for Community-Junior Colleges: Patterns of Control and Coordination* (Gainesville: University of Florida, Institute for Higher Education, August, 1971), pp. 28-33.

term "joint" implies mutual acceptance of the idea by the two or the several participating boards. How can this mutual acceptance come about when there is no pressure or incentive, except possible desire for some intra-state goodwill, to urge the board now in total control to change its attitudes and its actions?

Perhaps one line of action that should be suggested out of this conference is another amendment to the federal statutes. Such an amendment would mandate a joint committee with specified authority and powers related to it. The mandate would apply to all states where there are two or more boards and each has jurisdiction over a part of the state educational system and which provides vocational education services in one way or another to the people of the state.

I close, then, with these generalizations: state level administration of vocational education needs improvement in practically all states. Our concerted and intense attention as state directors of community colleges must be given to finding better methods of operation. And in doing this, we must of necessity, develop better techniques and structures for communicating and dealing with other state agencies having legitimate interests in community college programs and services. This conference can well be the start of new successes in this important work.

COMMUNICATIONS WITH THE STATE DEPARTMENT OF VOCATIONAL EDUCATION AND COMMUNITY-JUNIOR COLLEGES

By: John E. Snyder*

When Dr. Daugherty phoned me in Topeka, Kansas, a few weeks ago and suggested I make a presentation on how our State Department or Division of Vocational Education can communicate with presidents and leaders in the community colleges, I almost dropped the phone. My immediate question was, why me? It is no secret that things have not always run smoothly in Kansas vocational education and the community colleges, before my time or since. However, we are proud of our present record in Kansas and the rapport that has been created with the community-junior colleges.

There have been thousands of volumes written on the art of communications and millions of words spoken on the same subject, but in my opinion communications cannot and will not exist without two basic ingredients. The first of these is trust. Trust, according to Webster, is the firm belief or confidence in the honesty, integrity, reliability, and justification of another person or thing. It is the kind of trust that must be earned by both vocational education and the community colleges. We must trust the leaders of the community colleges to be sincere in their stated objectives of offering a balanced program of work or education for all persons in the areas served by their institutions.

We in vocational education have too long felt distrust for the academics. For too long those in higher education have treated us as a poor second cousin, a dumping ground, not quite respectful. This did little to create an atmosphere for trust to begin to grow. Also, at the beginning of the community college movement, many leaders felt that their institutions were failures if the vast majority of their students failed to earn an associate degree. On the other hand, vocational educators felt that their role, yes, even their mandate from the federal legislature, was to develop educational programs that would turn out students with saleable skills in the shortest possible time. These two basic philosophies were bound to create a feeling of distrust for both groups.

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It has been said, perhaps crudely, that death and retirement work wonders in resolving or at least alleviating problems. It might be closer to the truth to say that time has a way of helping those who are truly dedicated to resolving their differences. As time marched on, both sides in Kansas began to understand the nature of each other's institution. In fact, they began to contract with other types of institutions for services, thus strengthening both types. They also began to recognize educational programs offered, and now are working jointly to offer associate degrees for those students from both the community colleges as well as the area vocational-technical schools.

Our various state and subdivisions are using four types of institutions to meet the demands for vocational education. They are comprehensive high schools, technical high schools, area vocational-technical schools, and community colleges. Each of the above institutions is directly or indirectly in competition with each other. This is especially true in terms of state and federal support. Each one gets its share, and sometimes more, of the federal, state, and local dollar. Competition is not necessarily bad, but if educational leaders feel that their particular type of institution should receive more than others or do not fully comprehend the problems involved, serious problems for all can develop. First, state legislators who are always looking, or almost always looking, for reasons to trim appropriation requests are given a built-in excuse for not increasing appropriations until we resolve our problems. Secondly, the public begins to lose confidence in the educational system for not being able to resolve their own differences. Thirdly, the news media can really have a ball playing up rifts and fights, real or imagined. Our job is to educate the public, not give the masses reason to doubt our abilities, ambitions, and yes, our purpose for existence.

Statewide planning as well as local planning must be coordinated so that needless duplication can be eliminated and voids can be filled. Not all institutions should offer the same courses of study. Just because your neighboring institution starts an associate degree nursing program and is enjoying a good measure of success is no reason you should develop the same course. It might be more feasible to allow them to grow and expand their program to serve your community as well, while you develop a new program to serve yet another unfilled need. There is plenty of work that needs to be done in vocational education if we are to meet the needs of our citizenry. Let's start talking to each other at both the state and local levels. I am sure we all have some expertise and resources to offer. If we are not speaking, we certainly aren't communicating and if we aren't communicating, how can we develop trust in each other's abilities?

In Kansas, we graduate approximately 34,000 students from high school each year. In comparison with some of the states represented

here, that's not very many. In comparison to the number of post-high school institutions in Kansas, it's still smaller. For example, Kansas has three state universities, three state colleges, one municipal university, two two-year technical institutes, 19 community colleges, 14 area vocational-technical schools, 21 private and parochial two-year and four-year colleges and universities, for a total of 63 institutions of higher education, plus an endless number of private, for profit, educational institutions. It becomes readily apparent that if we are all to continue to operate we must learn to communicate. Competition for the student is keen. Students who come to our institutions place their future in our hands. This should be taken as a sacred trust and one in which we dare not fail. The trust that has been established has also developed the second ingredient needed if communications are to be meaningful.

The second ingredient is confidence. Confidence is defined by Webster as a firm belief, trust, reliance, or someone or some thing to be trusted. As Webster has defined them, trust and confidence are interwoven and one cannot stand alone. We must be confident that our counterparts have the ability, the insight, and the desire to develop programs that will best suit the needs of our students. They must be confident that the leadership and regulatory roles of the states' divisions of vocational education will be fairly administered to all who are involved in career education programs at whatever level. New administrative devices must be developed at the state level to insure close cooperation among existing state boards of education, divisions of vocational education, and the administrators of community colleges.

In Kansas, the assistant commissioner for community colleges and the assistant commissioner for vocational education work and plan together. The program approval or disapproval for post-secondary institutions is a joint responsibility of these two administrators who, of course, rely heavily on the recommendations of their competent staffs. To insure still better communications, some members of the Community College Advisory Council and the Vocational Education Advisory Council are members of both councils and both assistant commissioners attend these council meetings. Joint meetings of community college administrators and directors of area vocational-technical schools are planned to discuss mutual problems and concerns. Joint legislative committees have been formed and are active in combined support of legislation and financial support for their institution.

The establishment of good communications has not been an easy task, nor are all our problems solved. But as trust and confidence in each other grows daily, our tasks become easier and our energies can be expended to develop programs and services rather than to fight for position. Two words, trust and confidence, make the difference.

GROUP DISCUSSION SUMMARY REPORT

Group Leader: S.V. Martorana
Reporter: Alfred O'Connell

Marty, being a democrat at heart, decided that since we were discussing his paper, it would be in the interest of objectivity to appoint two other people, one to lead a discussion and another to report the results of that discussion. That is why I am here.

We discussed at some length two points presented in Marty's paper this morning. The first dealt with Marty's comments with respect to his survey on the relative ineffectiveness of the recently established state advisory councils for vocational-technical education. I think there was general agreement in the group that this is, in fact, the case. We were fortunate to have Cal Dellefield with us. Cal is responsible at the national level for working with and coordinating the activities of the state advisory councils for vocational-technical education.

A quick survey indicated that in one state, the state department of education staffed the vocational advisory council. But in most states there is a separate staff, and Cal informed us that this was the intent of the legislation. He did indicate, however, that he thought it would be vitally important that community colleges be represented on the state vocational advisory council. A representative from one state, Delaware, reported that contrary to other comments, he felt that the vocational advisory council in his state had been quite effective in playing a leadership role in his whole area. Again, Cal pointed out to us that the state advisory council is intended by legislation to participate in the development of the state vocational education plan and in many states this apparently is not currently taking place. The point was further made that the key role for the state advisory council is not administrative. The councils lose their effectiveness as evaluators if they get involved in the administration of a state plan for vocational-technical education. Cal suggested that the community college directors be heard regularly at the monthly meeting of the state advisory council for vocational-technical education.

I'd like to point out that in the state I represent, Maryland, this does happen. We have community college representatives on the council and, in fact, the vice chairman of the advisory council is a community college representative and either I or a member of my staff attend all the monthly meetings of that council and we

have an opportunity to place items on their agenda and get them discussed. We have made joint recommendations to the legislature in the past few months.

The point was made that the advisory councils are still too new to have truly defined their own role and perhaps the national office should help define their roles. The point was made that if advisory councils get stronger, and there seems to be an implication that perhaps they should get stronger, they might become a policy-making board. Again it was pointed out that this is not the intent of the federal legislation.

In the course of the discussion, it was pointed out that in many states, the state structures are so cumbersome and frequently politically orientated that the key to success in working with the state advisory council might well be on an informal person-to-person approach. Marty pointed out that he agreed that this was one way of accomplishing the objectives, but that in the long run you would be depending entirely on personal relationships and really we should have legislation which recognizes the varying approaches in the states. The federal legislation should be flexible so that it can accommodate the particular needs of the state rather than being rather rigid as it is currently in practice. Dana Hamel reported that in Virginia the three boards that are responsible for various segments of higher education are going to be working with consultants to review their respective roles. Subsequently, instructions will be determined as to who is responsible for what.

The second topic that our group considered related to the variety of organizational approaches we have in our various states that assume responsibility for vocational-technical education. The question was raised, should we have criteria to evaluate the effectiveness of one system as opposed to another? Again, in underlining the comment that Marty made this morning, there is need for research in this area. Perhaps the R&D Centers, such as this one at The Ohio State University, should take a leadership role involving all those segments of education that are involved in vocational-technical education and come up with some kind of criteria. It was also pointed out that the study on institutional governments being conducted by the Education Commission of the States, which has some political clout, should consider this issue in its deliberation.

GROUP DISCUSSION SUMMARY REPORT

Group Leader: John E. Snyder
Reporter: Jack Smythe

We exemplified the kind of flexibility that educators have been exemplifying for years, and we agreed on one thing and that is there was total disagreement on these 10 points that I am going to present. I will start out with that at the beginning of the report.

I am going to list the report in a topical outline because that's all my ability allows me to do. Discussing this topic of communication we covered the waterfront, as I suspect the other group did.

1) The question was raised about the influence of the accrediting association and several comments were made relative to their influence on this topic of communication.

2) We shifted gears a little bit and looked at some of the reasons for communication difficulties and this varied considerably, from personalities as John discussed in his session this morning to various other things.

3) We talked about organization as it affected communication. Some comment was made relative to state organization and as you know the speakers commented somewhat extensively on organization as a problem with communication. A question raised was, "how can vocational educators work with higher education?" It is true that an organization is the requirements of the state plan, the concerns of all aspects of education towards that state plan. We discussed some of the items in that state plan, i.e., what the state plan includes and how we work with various other organizations. We discussed a little bit about the impact of the state plan.

4) We briefly mentioned the impact of career education. Focus on the elementary schools, with focus on hands on training and focus on placement. We didn't want to pursue that in too much depth because we are going to hear more about that, but it was mentioned that perhaps the problem of communications will be compounded through career education. I got the feeling as I listened that

if you think we have difficult problems now in communication between community college people on the one hand and some other groups on another hand, when we talk about career education we may be talking about a much broader problem--a group that's much more comprehensive than the groups that are now involved with these communication problems.

5) We discussed rather briefly the allocation of funds, state and federal, to various organizations within the state.

6) We also discussed the broad topic that has come up several times lately, i.e., the need for a data reporting system, a much better data reporting system than we have now at any level of education.

7) The question came up of identifying manpower needs on a statewide basis. There were some concerns expressed about program development on an institutional basis or on an area basis identifying manpower needs on a statewide basis and of course, if you deal with multistate organizations, as we do in the Upper Great Lakes Commission, you start to do this on a multistate organization, which is not very sophisticated at the present time.

8) Associated with identifying manpower needs were the problems of program approval and we didn't talk too comprehensively on that.

9) The comment was made on the concept of education for the whole man. I think you're familiar with that topic. We didn't discuss it to any length.

10) We discussed contractual relationships particularly physical contractual relationships between and among agencies in vocational education, all agencies, proprietary schools, business and industrial establishments, etc.

We ended with a very positive viewpoint expressed by one state; its organization is making great strides in overcoming the communication problems. There was a feeling that the communication problem can be overcome and that some states have made more progress than others.

PART II

Program Articulation

Session Chairman
John C. Mundt

SECONDARY SCHOOLS AND COMMUNITY-JUNIOR COLLEGES VOCATIONAL EDUCATION ARTICULATION

By: F. Dean Lillie*

With the development of new dimensions in vocational education, articulation, or the transferability of credit earned in secondary vocational programs to post-secondary institutions, is becoming a procedural and policy problem educational institutions must solve. The basic purpose of this paper is to identify the problem areas and suggest ways to develop policies to solve these problems.

Vocational education articulation exemplifies all of the problems of educational articulation plus a few more. Traditional academic education is system-oriented whereas occupational education is student and goal-oriented. Students graduate from an academic institution with the goal merely to graduate. Students enter an occupational program with a specific goal of receiving training to enter a specific job. Articulation between academic system-oriented high schools and post-high school vocational education is therefore very difficult. Also, articulation between vocational high schools and academic institutions is difficult. Students are often caught in the transition between these two basic types of educational systems.

The process of articulation in academic education has been examined and reexamined, but vocational articulation has not been exposed as much to this kind of scrutiny. As new educational systems are being developed, many new obstacles in articulation are created that are almost, but not quite insurmountable. The educational process is supposed to be a continuous educational program for students from elementary to secondary, secondary to post-secondary and/or college or university plus employment. The system as currently operating is not such a continuous educational program.

Points of Conflict

Difficulties arise as the vocational student moves both vertically and horizontally through the educational system. The

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following pattern for career education is the current system developed for educating students for an occupation.

A) K-6, Career Education, study of the world of work.

B) 7-10, Exploratory; prevocational study with limited "learning by doing" experience.

C) 11-14, Job Entry; training for employment.

The vertical movement of a student is the movement from one grade to another up the educational ladder. Through movement within the system the student receives the following:

1) Information about employment which enables the student to make a career choice.

2) Skill training which qualifies the student for employment.

3) Preparation for further specialized or technical training.

4) Preparing for employment upon completion of an occupational course of study.

The lateral movement of a student within the educational program enables the student to be exposed to and master other related subjects. There are supplementary benefits to the student because of the related information gained in the related curricula. The lateral movement of the student within the system is important because of the broadening of the educational base for the vocational student.

Conflict between the two systems becomes more apparent as the student enters job entry training in the secondary school. It is traditional that the vocational students receive the same training in the related areas of instruction as do academic students. The majority of high school administrators demand that the door be left open for students allowing for transfer into a baccalaureate degree program following high school. Some vocational educators feel that this alternative is not necessary if the student has made an occupational choice. Therefore, job entry skills taught to the student in the secondary and post-secondary programs must be sacrificed by a requirement that the student qualify for college entrance and the time spent in seemingly irrelevant courses reduces the time spent in learning a skill. Once the vocational goal is chosen by the student, training should not be superseded by the academic alternative.

Decisions Pertaining to Career Choice

Students are evaluated daily by teachers, counselors, parents, and students concerning their vocational decisions. Up to now, the students have been forced to abandon the academic for the vocational or to ignore the vocational for the academic. Forcing a student into this career decision at an early age by two opposing educators very often dramatically affects the future and life-style of the student. Too often, decisions are made by individuals or for individuals on the basis of information about careers. To solve the articulation problem between high school and college or post-secondary education, it is necessary to widen the access to education beyond high school, regardless of the career choice. The range of options for students graduating from high school with varying degrees of saleable skills and academic competencies places students in a dilemma as to whether to continue their education or to enter the world of work with limited academic and vocational training. The following is a list of some of the student's options:

1) Enter a job with potential for promotion without the necessary education for promotions.

2) Enter a post-secondary institution for additional training without making a career choice.

3) Enter a specialized school for more intense training to later seek a greater skill-required job.

4) Accept a job and enroll in a correspondence course to increase competency.

5) Accept employment; enroll in continuing education programs.

6) Enlist in the service for vocational-technical training and/or use the G.I. Bill for additional training.

Wastes Caused by Lack of Articulation

There are financial wastes because of the duplication of programs that do not account for previous training in vocational education. There are losses of manpower because of these same factors. There are also losses of time by students who must run two sets of hurdles to achieve job entry skills. Duplicate vocational programs are initiated by post-secondary institutions because of a communication problem between institutions. Colleges tend to penalize students who have taken vocational courses in high school because they do not give credit for previous training at the secondary level.

The differing philosophies of educational leaders have increased the numbers and levels of programs required to achieve a certain skill level. Because of the various requirements students are not able to move from one level to another without suffering time, money, or credit loss. The real danger in complete articulation is to generalize courses of study to the point that skill training which will lead to job entry is not achieved.

Goals of Articulation

The goals of articulation should include the following:

1) To avoid duplication of vocational education programs. This will result in dollar savings.

2) To improve the competency of the students completing vocational education.

3) To design programs to be more efficient in the time span required to train an individual.

4) To assist the student in developing an occupational goal.

5) To increase the relevancy of both academic and vocational education.

6) To develop curricula which will give the student a more balanced vocational and general education program.

7) To increase the effectiveness of related training to assist students in advancing from one level of training to another.

8) To require educational institutions to work together to advance and realize the vocational objectives of the student.

Achieving Articulation

Articulation of vocational education from high school to community-junior colleges becomes increasingly more difficult because the people working with vocational education are generally products of academic institutions. The requirements to teach vocational education are as confusing as other areas of teaching. The requirements for job entry into a vocation are time-frame-oriented and do not relate to the competency of the individual seeking the position. The clock-hour approach in vocational education is as antiquated as is the credit-hour approach in academic education. Specific performance objectives for training programs

should be developed to replace the clock or credit-hour production as a measure of the success of a training program.

Articulation Problems

The following is a list of potential articulation problems the student faces when he transfers from a secondary vocational program to a post-secondary vocational program.

1) Post-secondary vocational schools sometimes do not set completion standards which are similar to job entry standards.

2) There are few policies developed by post-secondary schools for facilitating the transfer of students from secondary into post-secondary programs.

3) Change of vocational goals by the student.

4) Post-secondary schools do not have multiple entry and evaluation methods for skill training programs.

5) There is a lack of information pertaining to occupational education available to secondary students from their instructors and counselors.

6) There is a lack of information available to the secondary student from the post-secondary school.

General Recommendations for Improvement

The following are general recommendations to improve transfer of secondary vocational students into post-secondary vocational programs:

1) Develop specific performance objectives for all training programs to replace credit and clock-hour requirements.

2) Allow advanced placement in post-secondary programs.

3) Form agreements between secondary and post-secondary institutions to govern related general study requirements.

4) Establish secondary and post-secondary program advisory committees to determine completion requirements for job entry skill training.

5) Conduct periodic vocational education articulation conferences involving both secondary and post-secondary institutions.

6) Develop special internal policies for post-secondary vocational schools, technical colleges, and other institutions which receive vocational transfer students to facilitate the transfer of vocational students.

General Policy Statements

Access to vocational education should be open to all students regardless of previous success.

Grading: Universal grading standards should be developed which reflect the degree of completion of training rather than patterned after traditional academic grading systems.

Admission to Vocational Programs: Transfer students in a secondary school should be able to determine at any time the levels of training programs relative to post-secondary programs. Secondary students should not be penalized when transferring to a post-secondary institution by being required to start at the introductory level course.

Counseling: Aptitude and achievement test scores should be used as basic information to assist counselors and instructors in secondary schools to help students make sound vocational choices and/or training school choices.

Evaluation of Secondary Courses

Evaluation: Secondary courses should be evaluated primarily to inform the student how far he has advanced toward the completion of his skill training course. A record of programs completed at the secondary school should be made part of the post-secondary permanent record to be used for advice or in making new evaluations if the student changes his major.

Advanced Placement

Advanced standing programs enable the previously trained secondary student to receive appropriate placement and credit for post-secondary work.

Some benefits of advanced standing practices include:

1) Improved communications between secondary and post-secondary vocational training schools.

2) Greater emphasis on program planning to accommodate individual student abilities and achievements.

3) Permission for students with advanced standing to pursue additional related courses which will assist them in their training by permitting them to take courses they would not have had time to complete.

4) Students save both time and money.

5) Vocational dollars conserved for other programs.

Currently there are examinations available which measure levels of competency which could be used for advanced placement. Post-secondary schools should work cooperatively with secondary schools to develop advanced standing policies.

Courses Equivalent Between Secondary and Post-Secondary Schools

Secondary schools should work with post-secondary schools to determine parallel and equivalent training courses and programs. Curricular offerings should be compared annually so students are not caught in training program reorganization. Information concerning training programs should be communicated between secondary and post-secondary institutions in writing to all personnel involved in the transfer of students.

Other Activities Concerning Articulation

A broad base of personnel who deal with articulation problems should be involved in activities which will solve these problems. Policies involving articulation should be reviewed periodically by the groups which develop the policy. Task forces of personnel from vocational training institutions should be appointed to develop vocational articulation policies. These task forces should be voluntary rather than required by legislation. Communication at the departmental level should be mandated to discuss vocational transfer policies. Local action should include visits between institutions and interviews with students and advisory committees.

Summary

Articulation of secondary school and community-junior college vocational educational programs provides students with an opportunity to develop to their highest potential without unnecessary duplication of instruction and delay in attaining their educational and career objectives. Educators from all levels need to cooperatively provide the leadership which will develop and implement model vocational programs without articulation problems.

The main objective with institutions developing model vocational programs should be achievement that is measured by employability for occupations, both gainful and useful, and that is a reasonable match of both the talents and the ambitions of every citizen.

OCCUPATIONAL EDUCATION PROGRAM ARTICULATION BETWEEN THE COMMUNITY COLLEGE AND BACCALAUREATE LEVELS

By: Louis W. Bender*

There probably isn't a single individual in the audience who has not worked at some time during the past year on problems of articulation between the community college and baccalaureate levels in his state. For this reason, I feel a little like the character carrying coals to Newcastle, for I'm sure each of you are sensitive to many of the problems and opportunities I will discuss. On the other hand, when Ron Daugherty called me in November to ask me to make this presentation, I thought of the story of the young maiden who, while traveling across the country one hot humid summer day, came upon what appeared to be a totally isolated lake along the roadside. Since her car had no air-conditioning and she was most uncomfortably hot, she pulled off of the highway and parked near the lake, enjoying the beauty of the inviting lake waters, thinking to herself how delightful it would be to take a swim if only she had brought her bathing suit. After awhile, she yielded to temptation since, upon looking hither and yon, she could see no one and thus decided it would be safe for her to take a brief swim in her birthday suit. Not long after she had entered the water, she looked up toward her car to find that, lo and behold, standing between her and her clothing was a man. She waited, at first patiently, for him to leave but when he did not, she called to him and asked him to leave. He stood there and said nothing in reply. Then she decided to explain her dilemma and pleaded with him as a gentleman to leave the area so she could retrieve her clothes. He continued to stand there and continued to say nothing. Then she demanded that he leave. Still no response. Finally, in frustration, she looked down into the water where she happened to see submerged an old wash tub which she promptly grasped and placed in front of her as a shield as she proceeded towards the stranger enroute to her clothing. As she stepped from the water, she angrily declared, "Do you know what I think?" And he, in response, said, "Yes, you think there's a bottom in that tub."

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Now, I realize Ron's charge to me would be to define somehow a bottom for the tub representing articulation at the baccalaureate level. It would be quite simple for me to side-step the issue by addressing myself to the general principles of articulation, particularly with regards to the transfer programs of the community college and problems relating to the transition of students from the lower division at the two-year institutions to the upper division of the baccalaureate colleges and universities. It is not my intent, however, to spend much time on this issue. In the first place, several states represented here have successfully developed articulation agreements between the community colleges and their baccalaureate institutions which can prove helpful to those other states working on the matter. As you know, the National Council of State Directors of Community-Junior Colleges has scheduled articulation agreements as one of the two topics for discussion with state level Instructional Program Officers at the Dallas meeting of the American Association of Junior Colleges. At the present time, we at the FSU/UF Center for State and Regional Leadership are compiling the results of the survey for state directors identifying articulation projects and agreements in progress. As of the first week in January, there were 23 states reporting specific activities in articulation areas. Analysis of the various articulation policy statements reveals them to be generally consistent among the various states. They are usually broken into three categories: (1) associate degree graduates of transfer or college parallel programs; (2) students in the same programs who seek transfer before completing degree requirements including part-time students; and (3) students enrolled in occupational education programs whose primary purpose is entry into a career field upon completion but who change goals and aspire to pursue the baccalaureate program.

Missouri's guideline statement promulgated by the Junior College Division is illustrative of the mode among the states studied for the two types of transfer for students enrolled in the college parallel courses:

1) A student admitted to the university and holding an associate degree oriented toward the baccalaureate degree, with a grade point average of C or above as validated by an accredited associate degree-granting institution, will be accepted in junior standing. However, this does not exempt the student from meeting the specialized lower division degree requirements and the specialized requirements of departments or divisions of the university. Courses completed in the associate degree program will be evaluated for application to specific degree requirements by means of the same criteria used for transfer students from other colleges and universities, from other campuses of the University of Missouri, and from other divisions of the same university campus.

2) A student transferring to the university without an associate degree oriented toward a baccalaureate degree will have his transcripts evaluated on a course-by-course basis.

Illinois has made specific recommendations for the occupational education students as well as those in transfer programs. Their guidelines in this area read:

1) Institutions should recognize their responsibility to provide advanced educational opportunity to those individuals who possess rising aspirations and who have demonstrated interest and ability in occupational or technical junior college programs as well as to those enrolled in baccalaureate-oriented programs.

2) Senior institutions should be encouraged to design a variety of capstone programs which build on competencies gained in junior college technical and occupational programs and/or work experience.

3) Senior institutions should consider each non-baccalaureate-oriented applicant as an individual in making assessments for admissions and transfer of credit, and should, therefore, consider recommendations of junior college staff and other appropriate individuals in evaluating non-baccalaureate-oriented transfers.

4) Senior institutions should grant full credit for the general education courses of non-baccalaureate-oriented transfer students enrolled in occupational programs provided the courses meet the general education objectives required for the baccalaureate degree.

5) Credit earned in technical courses in non-baccalaureate programs should be applied in terms of their equivalence to baccalaureate courses in either the major field or electives when transferred to a baccalaureate degree program.

By far the most complex problem of articulation between two-year and four-year institutions will be the occupational programs of two-year institutions, whether they be technical institutes or community colleges. It has been of interest to me that even the term "articulation" is a point of issue with some. Because of an interest in words and word meanings, I could not help but check the origin of the term "articulation" which, I believe, is relevant to our discussion. According to Webster, "articulation" comes from the Latin root "articulus" which means "joint." Synonyms for articulation as we are using it are "integration," "joint," and "concatenation." Webster observed that "integrate"

comes from the Latin "integer" or a whole which implies things such as elements, parts, or factors are combined into a perfect whole, each losing its own identity. "Articulate," on the other hand, stemming from the Latin for "joint," implies a perfect whole but without loss of identity or distinctiveness of the separate parts or units. Thus, "articulate" is viewed as an anatomical word used by physicians to speak of the articulation of joints connecting to form perfection or organization in the skeleton in which each part fits into another in a manner comparable to the fitting into each other of two bones at a movable joint and a structure built up which functions as a whole yet without loss of flexibility or distinctiveness in any of its component units, or without any conflict between them. Thus, when we think of articulation of the occupational education program between the two-year and four-year institution, we are necessarily concerned about the component parts but as they can form into an articulated system of educational opportunity. From this definition, it is clear that articulation at this level has a long way to go and represents a most complex problem, indeed.

Dissecting the Problem

Perhaps we should use an anatomical parallel in attempting to define the problem and identify its significance as requested by Ron Daugherty in his charge to me.

One of the first of the complex problems is terminology. We in the field of education seem incapable of developing a meaningful, consistent terminology. If each of us here were asked to write a definition of such common terms as "vocational education," "technical education," "team teaching," or even "general education," we would probably find a range and variety of explanations quite far apart. We are notorious for having terms in vogue only to become obsolete because of misuse or attitudinal obsolescence. Think of how we have used the terms "terminal education," "vocational-technical education," "career education," and "occupational education," all at different points of time to denote a comparable educational program. The same is presently true in the area of remedial . . . or is it compensatory? or foundation? or basic studies programs?

Lack of clear terminology leads to confusion on the part of the general public, parents, and students as well. They are confused and misunderstand the range of educational opportunities as well as the appropriate rewards identified with them. Furthermore, such a deficit contributes to confusion within the profession itself--among the faculties and institutions of higher education. The debate as to the difference between engineering technology and technology has consumed many hours of faculty time. Efforts are made by some to overcome this confusion by developing taxonomies

of occupational fields and career levels. Industry as well as governmental agencies have contributed to the problem by inconsistency of job title and job description. It is not difficult to find tragic examples of the lack of articulation between job position and requirements. We need only look at the job requirements for a range of public service positions in state government to recognize academic degrees have often become the basis for many positions rather than appropriate competencies, skills, and knowledge components for which educational institutions could direct their programs.

A final aspect of the problem of terminology I'd mention is that of the vagueness associated with the concept of career ladders which we in education have led the citizenry to believe is available as a consequence of an experience within our institutions. Without articulation being of a nature described by Mr. Webster, we perpetrate a fraud on the public when we maintain youths and adults can use the different educational programs of a higher education institution to move from rung to rung up the ladder of a given career field.

A second major problem with which we must cope in achieving meaningful articulation is that of attitudes and the status syndrome. While we may say the chasm between the devotees of the liberal arts education and the utilitarian education champions is a thing of the past, we cannot avoid the fact that a negative attitude continues to prevail. The fear or misconception which prompts junior high school or high school counselors to advise the student, even the one anxious to prepare for specific career placement, to "be safe" by taking the college preparatory track in high school permeates the thinking of many counselors in the two-year college. We could address ourselves to the responsibility of the baccalaureate institutions for having created such perceived dangers but suffice it to say many students are encouraged to take educational paths which are inappropriate for their own situation.

I'm aware some would argue that I fail to accept the problem of obsolescence which accompanies training or preparation for job placement today. Yet I would counter with the charge that, if our educational institutions were actually flexible and relevant as we claim, we would be accommodating the requirements of transience and future shock in a cadence much closer than the five-to-seven-year gap presently reported.

An important aspect of this attitudinal problem has been the debate within the academic community as to how much actual preparation for job placement, as opposed to related or supplemental study directed toward citizenship within society, should be provided. Peter Drucker describes the center of America's work force as the "knowledge worker" who applies knowledge to productive work

ideas, concepts, and information rather than just muscle and manual skill. Thirty years ago, the most common type of worker was skill-oriented with straight application of physical dexterities. Today, and increasingly in the future, workers will need to apply basic knowledge to a variety of skills. It is clear that the distance between the theoretical and the applied as earlier exemplified by the "professional" and the "laborer" has been narrowed to a point where differences are usually identifiable with "knowledge based" functions.

The significance of the problem can be shown rather graphically by an examination of some statistics. In a recent U.S. Department of Labor publication entitled *U.S. Manpower in the 1970's: Opportunity and Challenge*, the following points were made:

1) The decade of the 1970's will be a period of strong economic growth accompanied by extensive work force growth.

   The gross national product (GNP) of our economy will increase by 1.4 trillion dollars in 1980, about 50 percent more than in 1970, and three times the level in 1950. This projection assumes high employment levels and expected productivity gains with a labor force expected to number more than 100 million workers by 1980 growing by 15 million in the 1970's.

2) The largest labor force growth during the 1970's will be among young adults--ages 25-34--who will be entering their prime working years.

   This is contrasted with the largest labor force growth in the 1960's from among those workers in the 16-24 year old range. The same publication also noted that the 25-34 year olds will be markedly better educated than the persons of the same age in the 1960's.

3) In the decade of the 1970's, the fastest growing occupations will be the professional and technical ones requiring the most educational preparations.

   This occupational group will increase by 50 percent by 1980 with service occupations ranking second only to professionals with a growth of 45 percent. By 1970, for the first time, there will be as many professional and technical workers as blue-collar operatives in the labor force.

4) The largest number of employment opportunities will continue to be in the service-producing industry.

   The United States entered the post-World War II period with more workers producing goods than providing services.

Service-producing industries--government, transportation, public utilities, trade, finance, services, and real estate--took the lead in the number of jobs in the 50's and raced ahead of goods in the 1960's. The trend will continue so that by 1980 service-producing industry will employ twice as many workers as goods-producing industries.

5) State and local government and service-industries will have especially rapid employment gains.

Employment trends for the past decade in the various industry-sectors of the economy generally will continue in the 1970's. However, state and local government will experience the most rapid growth with a 52 percent increase in employment. Services will experience a 40 percent employment increase and construction will follow with a 35 percent increase. Manufacturing will go only 11 percent, although it will continue to be our largest industry in 1980. Agricultural employment will continue its historic decline and by 1980 the nation's food will be grown by only three percent of the labor force.

Career Clusters

Now I would like to move from the significance of the problem to a further analysis of the component elements in an attempt to identify some of the successful existing practices and to project specific steps which we might discuss here leading to action upon return to our respective states. The status of articulation between two-year and four-year institutions in the occupational areas varies among different career fields and at different institutional levels. I will arbitrarily cluster the occupational fields into five areas. The first cluster would involve "business and computer sciences," which would encompass the range of certificate, associate, and baccalaureate-level programs in business, accounting, secretarial sciences, computer programming and data technology, and so forth. The second area we might label the "public services" cluster ranging from law enforcement, teacher aide, recreation, public administration, etc. The third area we might label the "health sciences" including dental, medical, and mental health fields ranging from practical nursing to registered nursing, to dental hygienist, to X-ray technicians, to psychiatric social workers, etc. The fourth area would cluster careers around "agricultural and industrial services" ranging from farming, processing, agri-sales and production, to construction trades, machinist, etc. The fifth field would be the "engineering technologies ranging from engineering aide to electronic, mechanical, and chemical technologies, etc. Now, if we think of these five cluster areas, we can easily see within each a hierarchy of job classification and responsibility ranging from semiskilled to

skilled to technical to the more highly theoretical level associated with professions.

Articulation between two-year and four-year institutions within each of these five clusters has varied. In the case of both the business and computer science cluster and the public services cluster, we find multi-tracks fairly well developed whereby individuals can choose rather clearly from an associate degree track designed for immediate job entry at the two-year college to a pre-baccalaureate track within the two-year college for the individual who ultimately wishes to pursue a baccalaureate degree. These tracks are fairly well defined and it is reasonably possible for an individual to move from one to another track without too much disruption. Most departments within these areas at baccalaureate institutions have provided for multiple avenues of admission into the junior year built upon the previous experience and training of the transfer student. In other words, a student who had completed an associate degree program in law enforcement no longer must go back and repeat courses already successfully completed at the two-year institution but can build upon that base through individual programming of courses to complete the baccalaureate program.

Probably the most activity at present is centered upon the third cluster of "health related sciences." Greater traditionalism and rigidity at the upper division level existed in this area than the preceding two, perhaps generated because of the unionistic nature of the medical and dental professions. Public pressure as well as more flexible programming recently within baccalaureate institutions shows this sector as being the most active in establishing meaningful articulation at the present time. It is becoming increasingly acceptable for a practical nurse to receive credit for a significant portion of her previous training as part of the requirement for a registered nurse program. This articulation at the two-year college level has encouraged baccalaureate institutions to establish comparable tracks for R.N. associate degree graduates who choose to pursue a baccalaureate degree for a supervisory position. The American Hospital Association has produced two excellent booklets you should have. One is entitled "Career Mobility Profiles" which describes successful programs while the other, entitled "Career Mobility: A Guide for Program Planning in Health Occupations" provides guidelines for program development. They can be used with many faculty or administrators who are working on the problem.

The "agricultural and industrial sciences" cluster and the "engineering technology" cluster are the least flexible at the present time. A variety of approaches are being tried and it would appear only time separates us from a more meaningful continuity between two-year and four-year institutions in this area. In all probability, the apprenticeship training origin of many of

the agricultural and industrial science careers are responsible for the traditionalism which tends to deter them from moving rapidly to overcome obstacles to facilitate transfer of students and recognition of experience and training brought by the students.

Some Promising Efforts

NSF: Evidence of the significance of the problem as well as promise of changes in the future is the effort of the National Science Foundation, Division of Undergraduate Education in Science to promote technician education development programs. The NSF has developed a new program in this area in order to support activities designed to expand and improve post-secondary technician education programs throughout the United States at both two-year and four-year institutions. The NSF has taken this action because of the critical manpower needs anticipated in the technician personnel area. In a brochure recently released, the NSF stated:

> The ultimate goal . . . must be a sequence of courses, successively branching so as to provide options as students progress and develop more definite opinions as to their own individual goals, or a set of course materials or course modules from which institutions can, by selection and adaption, create courses designed to accomplish specific ends.

Course and curriculum development, according to the same brochure,

> must include not only 'what a technician needs to know' but must provide direct experience in 'what he does.'

An emerging degree program: One interesting approach to an articulated program for associate degree graduates of technology programs is in operation in a number of institutions around the country. According to the Directory of Degree Granting Institutions, here in Ohio, the University of Dayton and, I believe, Central State University offer the bachelor of technology degree. The University of Connecticut, Eastern Kentucky University, Southeastern Minnesota State College, Norfolk State College in Virginia, the Capitol Campus of Pennsylvania State University, and Spring Garden Institute in Pennsylvania are also listed as offering the same degree. The bachelor of technology degree program is different from engineering programs and is designed for technicians who combine a highly specialized curriculum with a humanities and social sciences base. While several of the institutions mentioned provide for the full four-year sequence, several are upper division institutions only which offer the baccalaureate in technology degree program as a deliberate effort to accommodate occupational education graduates of the two-year colleges. In the case where the bachelor's degree builds upon the associate degree, several

institutions provide a rather unconventional curriculum structure whereby a student is given a sequence of courses based upon a series of proficiency examinations which are used to determine what the student needs to complete his background in order to achieve the objectives of the program. Thus, a student coming from a technical institute might find that a core of humanities and social science courses would be added together with courses in management and business administration, rather than in the technical field itself. This, naturally, is an attempt to broaden the experience of the student to enable him to assume a supervisory or leadership role.

Another student, because of his previous training and experience, might find it necessary to take more courses in the field of specialization and fewer in the business related or academic areas. In a study of the graduates of the baccalaureate in technology degree program at the University of Dayton during the academic year 1968-69, it was found that the average starting salaries were less than those of the engineering graduates and physics major graduates but equal to the average of chemistry major graduates and greater than the average of the graduates of the business or liberal arts programs. The average starting salary was approximately 90 percent of the average starting salary of engineers. Graduates were employed primarily for positions in technical marketing, field service, engineering, process engineering, and quality assurance departments of manufacturing organizations. As anticipated, graduates were not employed in research or development activities as were those from the engineering science areas. Those of you who would be interested about that study, can find it in the December, 1969 issue of *Engineering Education* in an article written by James L. McGraw entitled "The Emerging Bachelor of Technology Programs."

More resources: Another study which would be of interest to many of you here is one entitled "Less Than Baccalaureate Technical Education Programs in Higher Education," which is a report of a study conducted among the American Association of State Colleges and Universities, and the National Association of State Universities and Land-Grant Colleges, dated June, 1971. As you know, many four-year institutions do offer two-year associate degree programs in the occupational education fields among all five of the clusters I enumerated. In fact, only 113 of the 328 participating institutions offered no technical education programs while 33 limited technical education to the baccalaureate level. One hundred and forty-two or 43.4 percent of those participating, offer less than baccalaureate degree programs and enrollment has grown from 31,551 in 1967 to 57,145 students in 1970. Interestingly, 13.4 percent of the institutions studied added less than baccalaureate-level occupational education programs since 1967 with the number of programs offered increasing from 619 to 1,097 during the three-year period. Many of these institutions can provide an important avenue for state directors to work in enhancing

articulation between two-year and four-year occupational education programs. Many of these institutions have facilities and programs which could easily be directed toward baccalaureate in technology programs. Naturally, industry will need to be an important part of the consideration of such an activity.

What Can We Do?

What are some of the things state directors can do to foster articulation of the occupational education programs?

1) Determine how much of a problem actually exists.

   We speak generally about the articulation problem in the occupational areas but we have no concrete information on the number of students who are actually involved, particularly those who have changed their minds while in college towards the end of their associate degree experience. Obviously, we will find it far more difficult to identify the number of graduates who, after several years of experience, determine they would like to seek the baccalaureate degree.

2) Continue work on the overall articulation problem between the community colleges and baccalaureate institutions including procedures for the academic programs.

   The term "articulation" as defined by Webster and as viewed in an anatomical sense suggests that the separate units can and perhaps should maintain a degree of identity and not be assimilated to a point where they lose any character or individuality at all. There are many who believe we should not insist that a student receive credit for all previous course work if that course work is not directly complimentary to the next sequence he will be studying. If a student has taken a communications and related math in a technology course, he should understand that to change to a baccalaureate engineering program he will need to have a different math and English base if he is to prepare himself adequately in that field. Articulation conferences were held in 30 or more states last year. Several--such as Pennsylvania, Missouri, and New Jersey--have established standing articulation committees to study various facets of the problem. Florida has such a committee to referee problems between student and institution or institution and institution.

3) Continue work in the community colleges, bringing a level of understanding and commitment on the part of faculties to accept students where they are,

recognizing previous study or experience and either through performance and competency examinations or other means develop a program which will take the student from where he is to where he is going rather than expecting him to go back and repeat from the beginning. The previous two speakers have eloquently identified problems which must be faced by the two-year colleges. Credit by examination certainly ought to be operative in institutions dedicated to the open door philosophy. By this example, the community college could demonstrate conclusively the value of making articulation an individualized process whereby the institution, regardless of whether it be at high school, community college, or baccalaureate level, would design program components which assist an individual to move to his highest level of potential without redundant or irrelevant roadblocks placed along the way.

4) Give greater visibility to successful programs and practices in operation between two-year and four-year institutions.

Counselors and faculty need to know of such programs as well as the general public. State directors are in a strategic position to give state, regional, even national visibility to positive examples of good programs and practice.

These are only a few steps which can be taken. Hopefully, more will be identified during our discussion groups which follow.

ARTICULATION BETWEEN THE PROPRIETARY SCHOOL AND PUBLIC SCHOOLS

By: William Goddard*

I am pleased to have this opportunity to talk to you on the subject of proprietary school-public school articulation, because judging from the results of a survey I took in preparation for this talk, not much articulating is going on.

There were a few instances in which students would be referred to private schools for specialized instruction which would be applied in toto toward their degrees from the community colleges, and other instances in which work from private schools was accepted by the community colleges. This latter was not at all consistent, and one school reported having trouble getting acceptance of work for A students, whereas a C student had three years of work accepted without question. That particular student later finished his fourth year and became a teacher.

Some instances of sharing facilities, such as libraries and athletic facilities, and membership on the same committees and councils were reported.

Referrals from community colleges to private schools are made, but there appears to be a considerable shortage of information on the part of counselors about the community services outside the community college itself where students' needs might be best served. The counseling service of the community college appears to be about on a par with the information service of the telephone companies--rather narrowly defined and restricted to the services offered by the institution itself.

A copy of a letter from one college president to a legislator stated flatly: "Our college does not use public funds for recruiting students for private schools."

He had missed the point completely--that it is not the welfare of the schools that is in question, but the welfare of students.

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Articulation of the work of private and public schools needs to be looked at in several contexts.

Private proprietary schools have been meeting the need for vocational-technical education in this country since the time of Benjamin Franklin and his Academy in 1751. In passing the 1963 and 1968 vocational education legislation, Congress did not intend merely to substitute public monies and public schools for private monies and private schools, to do the same education job that had been done in the past by the private schools. It was not the intent of Congress to drive private schools out of business through competition with public schools. Instead, articulation with the private schools is clearly provided for.

In another context--that of education's role in society and the shape of things to come in education--the need for articulation is equally clear. Education is the father of change, and like all parents, it has to live with its offspring.

The job that needs to be done is bigger than all of us together are going to be able to accomplish. The complexity of our society is demanding increasing learning for people to fit in, to keep society functioning. We talk about people needing to change occupations during their lifetimes not once, but several times. But we haven't really come to grips with what that means in the way of allocation of national resources or development of educational systems to service it.

What we have been doing has been adding more of the same, rather than making the adaptations that are really called for. Education is going to have to take a much larger proportion of national resources. Instruction per se is going to have to take a much smaller proportion of the resources allocated to education. Larger proportions of the educational dollar are going to have to go into surveying need, into planning ways and means of meeting that need, into developing educational materials and methods that are truly effective and will permit fast efficient learning, and into evaluating the effectiveness of efforts and improving them.

The idea of selecting those students who can learn the easiest is going to have to be replaced by the idea of selecting means of instruction that are effective for each individual student, so that all students will be enabled to learn.

It can be done. Examples are all around us if we only open our eyes and our minds. In fact, one of the suggestions from many of the people who responded in my survey was that community colleges refer their dropouts and slow learners to the private schools, where they could succeed and perhaps ultimately be ready to go back to college successfully.

Time as a basis for measuring learning is going to have to be replaced by measures of student performance, and I do not mean merely verbal performance. Schools of yesteryear did not make that mistake, and most private proprietary schools do not make it now. Their accountability is of a very immediate nature, and the student who is not treated with dignity and enabled to learn successfully soon drops out. Inasmuch as a majority of private school students pay as they go, and their payments stop when they do, it behooves the private school to stay performance-oriented.

Education is the link between man and knowledge. As our society becomes increasingly knowledge-based, education necessarily must assume a proportionately increased responsibility.

It is a myth that increasing technology will bring increasing leisure. Instead, time released from production will need to be filled with the acquisition of knowledge to keep up with, and in harmony with, change.

The educational world has not really faced up to the changes taking place or to its responsibilities. Congress and the rest of society have placed greater faith and confidence in us than we have in ourselves, and they have a broader vision of our role in society.

Education has two main functions: the acquisition of knowledge and the transmission of knowledge. In the term "acquisition" I include all those efforts such as research that are concerned with the extension and organization of knowledge. Education is performing this function rather admirably. The other main function is the transmission of knowledge, and here education has been content to stop with presentation, which, I suppose could actually be classified as a part of acquisition and organization.

The communication world talks in terms of transmitter and receiver. Education has considered its job done if it transmitted. No Nielsen rating has held it accountable for reception.

There is in consequence another transmitter functioning now on many college campuses--noticeably absent among private schools. The communications of this new transmitter are frequently behavioral rather than verbal, but the message is loud and clear. Make our education relevant! Give me the education I want and am paying for! Prepare me for a job and provide placement!

The education of a simpler age is no longer adequate. Educators are going to have to go out into the world to see what is needed in the way of learning, to assemble and organize what needs to be learned, to reach out and find the people who need the learning and find ways of bringing them in and giving them the learning they need.

If the job is done the way it should be done, it will demand all the resources all of us can muster, public and private, school and community.

Now having looked at the background, let us consider some of the ways in which public and proprietary schools can articulate efforts.

I am on the Steering Committee of the National Study for Accreditation of Vocational-Technical Education, and some of what I say grows out of concepts that have developed during that study. The pilot edition of the study is now in press and should be ready for limited distribution soon. I would assume that people such as yourselves would receive copies, but to be sure, you might want to request one. The study is under the auspices of the American Vocational Association, with a grant from the U.S. Office of Education.

Guidance and Counseling

As I said earlier, Congress and the public have placed greater reliance on the public schools than the schools seem willing to accept. Our society today, with its increasing speed of change and its growing complexity, is in growing need of all kinds of linkage services, and guidance and counseling is one of these services.

Private proprietary schools accredited by the National Association of Trade and Technical Schools accept students after they have chosen an occupation. Guidance and counseling, therefore, have to be provided before the students come to private schools to aid them in making their occupational decisions.

The students need information--all the information they can get--and they need a trained, sympathetic ear to help them make a rational decision.

If the guidance counselors are to do their jobs properly, they are going to have to familiarize themselves with all community resources. The guidance counselors are there, not as recruitment agents for the community college, but as a source of help for students. Their recommendations should encompass whatever resources are best suited to the needs of the student, not merely those of the community college.

It would be desirable, therefore, if the state plan required each guidance counselor assisting young people with career decisions to acquaint himself thoroughly with all the community's resources for occupational preparation as well as placement. It should not be necessary for private school administrators to call on school counselors. The school counselors should be calling on

them to see what they offer and what kind of a job they are doing so the counselors will be prepared to give students the kind of help they need and the taxpayers are paying for. Career days and other less personal approaches may have to be used in large communities, and in all communities guidance counselors are going to have to have time allocated for surveying community resources.

Joint Planning: Surveys of Need and Resources

Surveys of community need and resources are another area where the community college can, and should take leadership. Its own selection of occupational offerings should not be left to whim or chance, or to the copying of what is offered in private schools or in other community colleges.

Time and money will have to be allocated to make such surveys, but as we said earlier, the proportionate expenditures on various aspects of education are going to have to change if education is to meet its challenge and responsibilities. I should have said then, that if we don't meet them, someone else will. Congress has placed reliance on us, but won't abide forever if the need is not filled--if we do not meet the responsibilities. New institutions will evolve instead, and education will have missed an opportunity.

There are complaints already about the inroads of industry into education, but these are nothing compared to the inroads that will come if education uses its new monies without meeting the need for which they were authorized.

Once the needs are known, means must be found to meet them. Open admissions are only an indication of the new recognition that education is going to have to stop selecting among students, and start doing its selecting at the other end. Instead of taking the students that can learn the subject, the schools are going to have to find the subjects the students can learn--or find new methods and materials so the students can learn what they have to learn.

Private schools are not in a good position to practice open admissions. You people would be the first to complain if our dropout rates got too high or our placement rates too low. So private schools admit to students that they think they can teach. But their methods are those of learning by doing, so that many students who could not succeed in the average high school or college are happy and successful in private trade and technical schools, and they acquire new learning skills and attitudes that enable some of them to go successfully through college later on. And if they have to work their way through college, they don't have to do it washing dishes. They can do it practicing their trade, with an income sometimes as good as their instructors'.

Every community college should have a general advisory committee to assist in its planning, and private schools should be represented as one means of keeping in touch with other resources of the community, just as the employment service should be represented, and other agencies that offer training and placement services.

Joint planning, with private school people included on planning committees, should enable the community to make use of all of its resources, with each providing the services it can perform best.

Contracts

In some instances the local school or community college contracts with private schools to provide services. Contracting has several advantages for the public community college:

1) It can monitor the quality of service provided to students.

2) It can obtain instructional service, often at lower cost than it could provide through its own facilities, and certainly without the capital outlay.

3) It frees capital for offering services not otherwise available in the community.

4) It permits service to be offered through existing sources, without splitting services, and thus reducing the student base for each until it might become unfeasible to offer the course either place. The number of available students might not support two programs, and it was not the intent of Congress to undermine existing services.

5) It frees energies for other activities, and provides a ready-made source of trained, experienced personnel and proven instruction and placement.

6) The college is not "locked in" with staff and equipment which it may find hard to rid itself of when occupational needs change. What actually happens, of course, is that staff and old equipment, once acquired, are hard to eliminate or replace in tax-supported institutions, so that instead of serving students the objective of the institution becomes that of finding students to keep the staff and equipment occupied. Private schools have much greater flexibility in changing staff and equipment if the need arises. By contracting with the private school, the community college frees itself to look objectively

at the needs of the community and of students, without being tied down by considerations of its own needs that might tend to take precedence over those of the students.

7) Private schools are freer to innovate and to make changes to meet student and occupational needs. Community colleges can often do through contract things that for one reason or another might be difficult for them to do themselves--for reasons of special restrictions, or whatever.

8) Contractual relationships need not be for the whole job, but can be for the parts that the private schools can often do best--such as provide highly specialized training, hands-on experience, and placement services.

Transfer of Work

The areas of articulation most frequently mentioned in the survey were that of transfer of work and acceptance of work from the private school toward a degree from the community college.

If the welfare of students is uppermost in mind, as it should be, there should be no question about granting advanced standing for work acquired elsewhere, and private schools make a practice of trying to place students on the basis of performance and ability at the time of admission.

Community colleges are publicly supported to serve community need, and it would seem to be their responsibility to evaluate the work of students coming from other institutions and give credit for it. It has been suggested that a joint committee or national conference be convened to help iron out any problems connected with transfer of work.

Joint Programs

An extension of the idea of transfer of work was that of joint programs, whereby the student receives academic training and sometimes theory in the community college and receives specialized occupational training in the private school.

The new materials coming out of a study sponsored by the American Vocational Association will include the idea that preferably, the academic training and theory should be closely related to the requirements of the occupation the person is preparing for.

Sharing Staff, Space, Facilities

Sharing staff, space, and facilities was mentioned. Instances of private school students using community college libraries or athletic facilities were mentioned.

Other instances were mentioned where private schools had supplied instructional materials and helped the community college set up related programs in the field.

Inasmuch as the community college is a community facility, it would seem that the students of private schools should have access to their facilities on the same basis as any other citizen group and that, in addition, they represent a ready-made group of people for which the community college might want to provide special services.

Joint Meetings, Joint In-service Training, Reciprocal Training of Personnel

The area of joint staff meetings, joint in-service training programs, and reciprocal training of instructors and guidance counselors is one that can be profitably explored.

Many of the schools responding to my inquiry expressed a willingness to provide in-service training for faculty members of the community college, to acquaint them with the needs of the occupation for which preparation was given, and the kinds of education students needed preparatory to, or supplementary to, their occupational preparation.

If the full resources of the community are to be utilized to the fullest benefit of students, personnel of public and private schools are going to have to know each other and appreciate what can be best offered by each.

There are going to have to be formalized ways in which they can come to understand each other and learn how to use each other's expertise to the benefit of students and the public.

The present air of suspicion and distrust is going to have to be replaced by a healthier atmosphere.

Education cannot afford to be a house divided against itself. Already it is coming under fire from the outside for its failure to meet the needs of society.

The private school has something to offer that is needed. It has had to prove itself with a kind of accountability that is much more immediate and telling than anything the tax-supported institutions ever face.

Because of the nature of their services, they keep closely in touch with the needs of the occupations for which they prepare their students. They aim to see that their students are prepared to do the job when they start to work; many of them have the employers knocking on their doors trying to hire their students before they have graduated.

Faculty of the private proprietary schools tend to be less strong in teacher-preparation than they are in occupational competence. They tend to come directly from industry and are often without degrees. The community colleges could provide a service by filling in the gaps in the educational backgrounds of the instructors in the private schools.

The opposite, of course, tends to be true for some community colleges, so each could help the other by filling in the gaps in instructors' backgrounds.

Conclusion

In conclusion, we would like to welcome your suggestions for articulation. I think you will find the National Association of Trade and Technical Schools open-minded about anything that will help students.

Trade and technical education is gaining in importance, and it would be most unfortunate at this time if the relations between community colleges and private schools should be such as to weaken either. Instead, we should all be working together to create stronger programs with greater options for students.

The cost of private education is not cheap, but for the student it is often less expensive than public instruction because it gets him into employment sooner. Public instruction is not cheap, either, of course; its costs are just felt less directly.

There is a push throughout our whole society to see to it that no one leaves school without a saleable skill. Higher education has traditionally provided leadership, and the community colleges will be called upon not only to perform services themselves, but to provide leadership throughout the community to see that the public demand for effective occupational preparation is met.

I urgently hope that the community colleges will not so immerse themselves in the direct meeting of need that they fail to see their obligations to provide leadership in the coordinating of community resources to identify and meet community need. And if the community colleges take this broader approach, meeting their full responsibilities, I am sure that appropriate articulation

between the community colleges and the private schools can be worked out to the satisfaction of both and the benefit of the students and the community as a whole.

It is the function of the private school to excel, to pioneer, to serve special needs, and to provide options--in other words, to do the jobs that need to be done by private vision with freedom to move boldly along unexplored and little-frequented paths, where public monies will not be committed until wide public knowledge, acceptance and demand exist, and it becomes politically possible to provide funding at public expense.

Unsupported and unhampered by the constraints surrounding public institutions, the private schools can function only where need exists and demand develops. Private schools are not accountable at the polls, but they are accountable in an even more direct manner--in the market place. They exist on their reputations, and anything that soils the reputation of private education is of more than moral concern.

Private schools have much to offer you. Private schools want to work with you. Let's get together, share ideas, and make better things happen in our communities.

GROUP DISCUSSION SUMMARY REPORT

Group Leader: F. Dean Lillie
Reporter· John Condon

There are two topics upon which we centered our discussion: (1) clock-hours versus credit hours and/or replacement for these two, and (2) identification of practicing articulation programs or solutions to this problem as demonstrated by those who attended our particular group. We have a position that we would like to present to this group, which I will present in my concluding remarks.

In dealing with clock-hours and credit hours, we got some responses from the representative from Ohio. It was mentioned that as far as the community colleges are concerned, the secondary schools convert their clock-hours to credit hours at the time of leaving the institution. So the student just picks up the credit hours and assimilates them into his regular program. At this point they're not worrying about the difference or the two ways of measuring secondary school effort or vocational education efforts prior to coming to the community college. There is also recognition that in our efforts to try to get understanding and acceptance of the associate of arts degree program by our four-year senior college colleagues, we should be as receptive to the transfer coming to us from the vocational-technical and trade schools to our community colleges. There is some question as to whether we were as receptive as we are, as hopeful of receiving from the four-year institution. No answer, but just the statement that we should be able to be as tolerant as we hope the four-year colleges will be with our associate of arts.

There was some discussion that there is more effort being done in using proficiency tests to evaluate the prior experience of students who have had programs or have come from programs in trade and vocational education schools. Continuing with this topic, Fred Wellman from Illinois mentioned that there is some serious discussion, although there is no implementation, this is exploratory. They are considering going from a credit to a clock-hour basis in Illinois. There seemed to be consensus that part of our worry and concern over the unit and clock-hours is due primarily to accommodate cost accounting and trying to find a unit of measure whereby we can relate costs from one program to another, based on some kind of an agreed upon measure. This is why some of the discussion is being considered in the various states.

There was some discussion about using the College-Level Examination Program exams where available. They work for the academic and there are College-Level Examination Program exams and programs for the academic subjects, but these kinds of examinations are not always available for occupational experiences. However, there was some talk that some of these are being worked out at various institutions in order to bring about the use of this examination for proficiency.

Moving on to identification of practicing articulation programs in use in New Jersey, there seems to be a difference of opinion between the vocational education and community college leadership about this articulation and it is under serious discussion in that state. They hope to have it resolved in the near future. In Colorado, one of the means of helping this articulation is that they place secondary vocational education schools within the community colleges or on the same properties. They find themselves teaching secondary school students as well as post-secondary schools in the same unit. This involves secondary school students coming to the college for part of the program and remaining at their individual high schools for the balance. This usually starts in the junior year.

In Kentucky, they're finding that there are some high school vocational schools being placed in close proximity and in some cases, across the street from, community colleges offering the same program, the same shop opportunities, the same equipment opportunities as in the community college. I didn't pursue this as recorder but apparently there is little or no coordination because the planning and developing are overlapping within the same community.

South Carolina has found that the current practice is to develop institutional policies, between institutional heads, to aid students in moving from one institution to the other. But they found that this tends to alienate the faculty and it was suggested by the South Carolina representative, that perhaps if possible, there might be a reversal of this procedure whereby faculties would begin to articulate and then out of this there may be a need for policy. But the leadership is developing policies and causing some frustration among the faculty.

The position that this group came up with to present to this group for action is that there be a committee of state directors for community colleges and vocational education directors to work on a position paper on the desirable articulation of occupational programs, a recommended procedure to assist in improving the articulation between secondary and post-secondary schools, hoping that the idea of this joint effort would be beneficial to all of us in the field. It might be used as a supportive document as we try to move or to impress legislators or other leadership within our individual states.

GROUP DISCUSSION SUMMARY REPORT

Group Leader: Louis W. Bender
Reporter: Charles Donnelly

We discussed a number of ideas. I think that if I were to enumerate all of them, we'd fall far behind schedule so in the interest of time, I'll try to be brief and just highlight the various ideas. It also gives me an opportunity to talk briefly about our friend Howard Hughes in Nevada who has been in the news the last couple of days. I'm very happy that he has finally decided to come out of seclusion, because he was a friend of the community college in Nevada. As a matter of fact, a couple of years ago, he gave the community colleges a quarter of a million dollars, half of which we used to resurrect Elko Community College and the other half was used to fund my office. So we're very grateful to Mr. Hughes.

We did attempt to answer the question the chairman raised as to how many states had full acceptance of the associate arts degree and how many had agreements. Very few had formal agreements, and some of them were very much like the one that we have in Nevada where the Board of Regents passed the resolution stating that any student who graduates with the associate arts degree must be accepted at the two state universities with full junior status. However, there is no agreement on the occupational students, and we are currently working on an articulation agreement so that those students can be satisfied, too. Somebody raised the question in the discussion that even though universities might accept 60 semester hours of credit, the students still might have to take some 90 semester hours or so in order to graduate, i.e., in order to fulfill the divisional, departmental, or college requirements.

One of the issues that we addressed, that many people thought was critical, was the relationship between the area vocational schools and the community colleges. The community colleges should give specific credit for the vocational programs. For example, a program like practical nursing in the area vocational school ought to be transferable into the college for the associate degree in nursing without the loss of credit for students. Many states are working on this kind of agreement. It was pointed out that in Missouri they are using the unit or modular approach, giving performance tests to the students coming from area vocational schools in an attempt to find out exactly where the students are and placing the student accordingly in his program.

Another suggestion in this matter of the area vocational schools related to those offering post-secondary programs, most of them without the associate degree. There ought to be some kind of cooperative program for the community colleges to offer the general education and the area vocational schools, the skills part of the program. The community college will then award the associate degree to the student. It was suggested, too, that perhaps this whole question of articulation might be viewed now because of the universities' need for numbers from the junior and community colleges. We have many more students now and universities may need these students in the junior year for purposes of funding. Lou Bender pointed out that the state universities in Florida are very much interested in this and that each one of them now has an office of community college affairs.

The question was raised, how many community colleges accept the students who have had an occupational course in high school into their transfer program? I think that the consensus was that most of them do and if we expect the universities to treat our students in this way, then we ought to do the same thing with the high school student.

One of the issues that was mentioned was the growing number of baccalaureate degrees in the technologies. For example, 76 colleges currently offer the bachelor of science degree in technology, and most of them accept the two-year degree. Another example pointed out was the bachelor of health science degree in Kentucky which was really a two plus two arrangement, with an associate degree in arts and then the final two years. The first two years are primarily the occupational or technical program and the last two years are primarily general education. We then got into the discussion of terminologies--whether the universities really have their objectives known in general education or whether we in the community colleges have them stated. Another discussion was the term "non-baccalaureate-oriented." We sometimes get bogged down, as was mentioned before, in terminologies and how to classify students. This, in part, hinders us in our articulation agreement. The question was asked, is the associate degree in arts part of the baccalaureate degree, or is it a separate entity in itself? There were differences of opinion concerning this. It is one of the crucial questions in articulation. There are many universities now awarding associate degrees. Somebody suggested that one possible answer would be for the community colleges to follow the Carnegie Report and offer the three-year baccalaureate degree and leave the universities to do the graduate work.

We also discussed whether the associate of arts degree is good for anything except for transferability. We also discussed CLEP. One of the problems that many of us face in dealing with CLEP exams is the cutoff point. Nobody seems to agree on what

the cutoff point should be for accepting credit. It was interesting to note that we accept the G.E.D. in most cases for admission to our colleges but then question the performance kind of tests. Someone pointed out that maybe we used the wrong kinds of statistics. Instead of talking about how well our students do in comparison with students of the university, perhaps we ought to emphasize, as in Massachusetts, that 50 percent of the students who graduated from the University of Massachusetts could not meet the requirements for admission four years before they graduated. This becomes one of the real roles of the community college.

And finally, we raised the question in articulation about the transferability of students from the universities to the community colleges. I think this is one that we largely ignore, but there are many students who fail in the university and want to come to the community college. I know we face this in Nevada. There are a number of them who fail and want to come to the community college but we can't guarantee them that when they go back to the university their credits will be accepted, unless they graduate from the community college. Then there are also a number who change their minds about a particular program and may find that their interests are more suited to the community college.

GROUP DISCUSSION SUMMARY REPORT

Group Leader: William Goddard
Reporter: Charles Moench

I am very pleased that you said that I was selected. I really wasn't elected, I was merely selected as being the one sitting most conveniently at the time the recorder was required. Not being able to take shorthand or possessing many of the practical skills of my trade, I'll suffer through this report with you. We touched upon many things and I would say our group wasn't primarily a discussion group--it was a question and answer period, and it seemed at times Bill Goddard was being put on the spot, so to speak, but he handled himself very well and, of course, I think, expected some of this.

Trying to relate what we discussed in any meaningful fashion is rather difficult because we did seem to ramble. I think that there are about five areas that we touched upon and I will briefly mention these. The first is primarily a definition of what we were talking about when we talked about proprietary schools. Based on the information provided by Bill Goddard, it would seem that in this definition of proprietary schools are included both the profit and nonprofit schools, that in many states that have proprietary schools there is no distinguishing characteristic between these two schools as far as the state is concerned. In addition, apparently even within the group of schools that are within this one accrediting association--there is not a very distinct difference between some of these institutions. Bill indicated he thought about 75 percent would be the profit type and approximately 25 percent nonprofit types of institutions. This was a figure that was presented today.

The second item we talked about was what regulations exist at these proprietary schools. There seem to be several types of regulations, one of which is the regulation imposed upon the schools by their own accrediting group, for example, the National Association of Trade and Technical Schools that Bill represents. He indicated also that this body represented a diverse group of schools but didn't include five types of schools, four of which he said were the four B's--business, barbering, beauty, and burial. I assume he meant mortuary there.

In addition to this, there is regulation of proprietary schools in a number of states. The figures that he was able to provide indicate that about 33 states now have some legislation which regulates and also, of course, recognizes proprietary schools.

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Obviously, the type of regulation varies greatly. In some states, apparently, it's a weak law; in other states, such as the example given for Pennsylvania, it provides recognition for a degree. In many cases, of course, this assists in the process of articulation with other schools and the transfer of credits from the proprietary school. In fact, in many areas, Bill indicated, there is really no great articulation problem. In many areas the credits, i.e., the courses, that are provided by the proprietary schools are accepted by the public institution, but this is not true of all areas.

One of the areas that we talked about was contracting with community colleges. Apparently, it was rather difficult to identify many areas where there was some contracting occurring. It was indicated that in Illinois there is some contracting between community colleges and proprietary schools, particularly in the area of cosmetology. But as far as being able to provide other illustrations, we did not have many, although it was indicated that in some cases, there is a type of contracting, not for an entire program of studies, but for certain segments of study. For example, in one area, the proprietary school will provide the specialized skill training while the public institution will provide the general education and related training, and together this will comprise the two-year program which will meet the requirements of another accrediting body.

The fifth area that we talked about was articulation between the schools, proprietary and public institutions. One of the many differences of opinion that was voiced, is that in some cases the student that finishes a proprietary school program can actually teach in the public institution--in one of the trade areas--but cannot have the credits for the courses that he took in the proprietary school accepted by this very same institution, the public institution. I think this sums up, fairly well, the type of articulation that exists. In some cases, it's a full recognition of a part of a program, and in still others, no recognition is extended. But this can get into a situation where even though no recognition is given to the formal training program as far as the transfer of credit is concerned, the graduate may be recognized as far as the needed competency for instructor on the staff of the public institution.

As we discussed these five major issues or areas, there were a number of other interesting comments that came up. One is the position that I imagine we can attribute to many of the proprietary schools. That is, many of the schools have taken the position that they are not looking directly for public support. They are looking for a support that goes directly to the student and not to the institution, thereby, giving the student an opportunity to decide which institution he wishes to attend. And I believe all of us have heard people representing private schools express this in the

past, that the aid should go directly to the student. The student then has the opportunity to choose the type of institution he wishes to attend.

There was one other comment made toward the end of our discussion that we thought was relatively revealing. Bill had said that one of the things that the proprietary school can do in many cases is to provide a relevant type of education more cheaply or at less cost than the public institution. One of the comments made as a result of this remark was most interesting. It indicated that the public institutions themselves, in some cases, could do the very same thing except that they were governed by other types of criteria or regulation that committed more expensive programs to them. In the particular case that was indicated, there was even a requirement that stated the minimum number of square feet that would be assigned for each student station.

PART III

Career Education

Session Chairman
Dale C. Schatz

Banquet Master of Ceremonies
Richard Wilson

Introduction of Featured Speaker
Al Riendeau

CAREER EDUCATION AND THE COMMUNITY-JUNIOR COLLEGE
EXPANSION OF REMARKS MADE AT THE BANQUET

By: Dr. Robert M. Worthington*

I am delighted for this opportunity to be your speaker this evening. I bring special greetings to you from the U.S. Commissioner of Education, Sidney P. Marland, Jr., who is unable to be with you and has asked me to speak in his place. Knowing of his interest in my topic which is career education and the community college, I can assure you, however, that he is with us in spirit at your seminar.

As you all know, career education has been identified by Dr. Marland as a top priority for the United States Office of Education. This important emphasis at the highest national level also exists at the state levels of educational leadership. This is not a fad nor a passing fancy; it is rather a concept that has gradually but steadily emerged with careful consideration of a national need--a need for all students to have a more meaningful education. Therefore, we may well ask ourselves at this time what the concept of career education protends for our educational programs.

What Is Career Education?

Career education would be a comprehensive educational program which would begin in kindergarten and continue through the adult years. It involves a restructuring of the basic school subjects around the theme of career development. Elementary students are helped to become aware of the wide range of career options in our economy, to develop self-awareness, and to develop favorable attitudes about the psychological and social significance of work. Junior high school students explore specific clusters of occupations through hands-on experiences and field observation, as well as through classroom instruction, and they begin to develop career decision-making skills. Senior high school students prepare for

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*Dr. Robert M. Worthington is Associate Commissioner, Bureau of Adult, Vocational, and Technical Education, U.S. Office of Education.

job-entry in a selected career area through classroom, laboratory, and on-the-job activities and concurrently prepare for further education. The basic academic subjects become more relevant because the student is helped to perceive the relationship to future career goals. All exiting high school students are assisted by the school in securing placement either in a job, in a post-secondary occupational program, or in a college. College students enroll in higher education with a purpose and a clear sense of direction, focused on a career goal which they have established for themselves.

Integral Part of the Overall Education Program

The need for developing career competence and awareness obviously starts long before the student reaches community college age. Career education, if it is to effectively reach all populations, must be integrated into the curriculum at all levels. This means a pyramid organizational structure, with one component building upon another. The elementary and junior high school levels should concentrate on occupational orientation aimed at bringing about an awareness of work roles and requirements to children, perhaps for the first time, for children are often completely mystified by what their fathers say they do "at work." Small wonder that they have little understanding of the multitude of jobs which exist in our society.

The high school career level education should be available for all students. And this kind of education must be accompanied by meaningful guidance and counseling.

The post-secondary institutions must be designed to fit career aspirations and requirements by providing meaning and purpose to job preparation, as well as to prepare some students for education leading to a baccalaureate and perhaps graduate professional preparation. Throughout the students' school years, exploratory hands-on experience, site visits, and cooperative educational experiences will bring the student face-to-face with the world in which he is preparing to live. More and more of our youth will "go to college" whether it be a junior or community college, a technical institute, a branch campus of a four-year college, or other post-secondary institutions, private or public, to prepare for the many attractive "action" oriented jobs at the technician or similarly specialized level.

So from kindergarten through post-secondary education, students should receive a myriad of career opportunities and first-hand knowledge from which they will chart the course of their lives. Activities which explore many potential options in the world of work must be available for all students. For only in this way can students focus on their strength and their limitations in relation to available options.

It is highly unlikely that education will ever again be considered terminal at any given point or level. On the contrary, career education is apt to become a lifelong process. Skills that are learned today will, too soon, become obsolete in the rapidly changing future. This new concept calls for turning out graduates with minds and spirits that accept without question the idea of continued and continuous learning. Lifelong learning appears to be the only hope we have of mastering our advancing technology.

Support for Career Education

In January, 1971, shortly after Dr. Marland was appointed U.S. Commissioner of Education, he delivered a speech before the convention of the National Association of Secondary School Principals in Houston, Texas, calling for immediate steps which would bring about the large-scale implementation of career education. This was the beginning of a series of speeches and actions which the commissioner has taken to launch what has become, in a very short period of time, a major national thrust in career education.

Hence, a year later, we are able to describe these current developments in career education at the national level. Under Office of Education sponsorship, there are six sites which have been selected for the development of large-scale demonstration models of career education in public school systems. The sites are located in the states of Arizona, California, Colorado, Georgia, Michigan, and New Jersey. Assistance in the development of curriculum materials will be provided by Ohio State University's Center for Vocational and Technical Education, The Center which you will have the opportunity to visit tomorrow and at which time you will hear more about these new school based models.

In the meantime, 52 "mini-models" of career education programs are already in the operational stage as "exemplary programs" under Part D funding from the Vocational Education Act. One of these "mini-models," each of which functions in the setting of a local school district, has been activated in each state, as well as in the District of Columbia and Puerto Rico. Recently, discretionary FY 1972 Part C funds under the Vocational Education Act have been allocated to the states, to enable each state to initiate another "mini-model" of career education at an additional site. This provides for a nationwide network of career education model efforts, with the six large-scale demonstration models plus more than 100 "mini-models" spread geographically across the states and territories.

There are several states and numerous local districts that have begun, on their own initiative, to also develop and implement career education programs. I direct your attention to these models because of their potential for greatly improved school programs in local districts broadly distributed across the country.

In addition, there are three other "models" testing the concept of career education, again under Office of Education sponsorship. The other three will be based on the home, involving extensive use of television instruction for adults and out-of-school youth; on employment in an industrial plant or office; and on special residential facilities such as boarding schools or camps where adults and teenagers would live temporarily for intensive career training.

Implications for Post-Secondary Students

With these developments in mind, I know that you as state directors of community colleges are most interested in the predictable consequences for the future community college student.

For we are speaking of a concept that may become a major component of the schooling provided some 80 percent of the nation's students--in contrast to the 25 percent currently enrolled in vocational-technical education programs. This could mean a "new" student--a career educated student--one who has had the benefit of an entirely new curriculum, with vocational skill training playing a key role. For career education is not merely a substitute for "vocational education," or "general education," or "college-preparatory education"; instead, it is a blending of all three into an entirely new curriculum.

In a speech before the International Conference on Education held in Geneva, Switzerland in September, 1971, Commissioner Marland outlined what career education will mean to students.

> The K-6 student will begin as early as kindergarten through revised curriculums to relate reading, writing, and arithmetic to the varied ways by which adults earn a living.
>
> The junior high student will select three or four of 15 occupational "clusters"--broad groupings of related occupations such as marine sciences, construction, fine arts, and health--and begin exploring the nature of careers in each.
>
> The senior high student will concentrate on one or two clusters, developing sufficient skill in a specific occupation to qualify for a job. All students would have an opportunity to enjoy actual work experiences during their high school years through cooperative arrangements with business, industry, and public institutions and agencies.

Thus, the student who enrolls at your community colleges could indeed have a different set of abilities and career interests. But therein lies the richness of the community colleges for your institutions have already achieved an enviable record for

meeting the changing educational requirements of our society. In particular, I am aware of the excellent response of community colleges to occupational education programs and adult education programs.

But at the risk of repetition, I would like to emphasize again that career education has implications for all post-secondary programs and not simply those considered vocational or technical.

On this subject, may I call your attention to the December report of the Task Force of the Education Commission of the States on Occupational Education in Post-Secondary Education entitled "Vocation as 'Calling.'" The major theme of this report is the need for career education and occupational preparation at all levels. The Task Force calls for a fundamental realignment of priorities, specifically suggesting (and I quote) "that we return to the concept of education as career preparation, of vocation in the classical sense of what a person does with his life, his 'calling'."

The Task Force members further make the following statements, which I quote because of their relevance to our discussion:

> (1) that occupational education must be seen within the total context of education; (2) that the concept of occupational education in the restricted sense of skill preparation for immediate entry into the work force needs to be broadened to include the cluster approach to occupational preparation necessary for orientation to the gainful occupations and career planning much earlier in the educational process than is now generally the case; and (3) that, so conceived, vocational, occupational, technical, and career education not only are integral to and not alternatives for the educational process at all levels, but must be taken into account and reflected in all major educational decisions and priority determinations in local, institutional, state, and federal settings now and in the future if the educational structures and strategies for revitalizing the nation's educational system are to meet the needs of the contemporary world.

Among the other issues emphasized in the Task Force report is the necessity for coordination and articulation among the diverse institutions that offer occupational education in the context of vocation as "calling" or "life work." The report states that "such education is not the exclusive prerogative of any one type of institution but may and should take place in a variety of settings including senior colleges and universities, community and junior colleges, technical institutions, area vocational-technical schools, technical-vocational high schools, comprehensive high schools, and other agencies (public, private, or proprietary)

as may contribute to manpower development and utilization." We too recognize the need at the federal level for better articulation and coordination regarding occupational education and I can assure you that I am personally making this one of my highest priorities in my new position. I should be glad to hear from you or your institutions relative to how we can improve in this area.

I am sure that you recall the recommendations of the ECS Task Force on Community and Junior Colleges in their report of April, 1971, namely, that in respect to career education, the community college is urged to serve the needs of individual students--to recognize that one objective of all education is preparation for an occupation. The Community College Task Force also spoke of the special need for coordination in the area of occupational education.

Higher Education Amendments

Before closing, I should like to review very briefly with you Title XIV, i.e., the Occupational Education Title of the Higher Education Amendments of 1971. As you undoubtedly are aware, the Congress will consider in conference the House and Senate versions for the amendments to the Higher Education Act.

Among the provisions of the Occupational Education Title, originally included in the House bill, funds would be authorized for the introduction of occupational preparation, counseling and placement in elementary and secondary schools.

A second issue emphasized in this title is the improvement and expansion of post-secondary occupational courses. The Occupational Education Program is based upon legislation introduced by Congressmen Al Quie of Minnesota, Roman Pucinski of Illinois and a number of other members who desire to improve the federal administration--and coordination--of vocation and manpower programs.

Since the bill specifies that training and vocational education, within occupational education, vocational, and technical education in community and junior colleges must be placed in a new Bureau of Occupational Education, I invite your participation in the review of this title as Congress proceeds to consider all of the Higher Education Amendments.

An effective local, state and federal partnership in the development of flexible systems of career education to meet the needs of the states and the nation will depend upon people like you. Community colleges are particularly crucial in any plan, for example, in your ability to provide continuing education programs for adults. All of us who have dedicated our lives to vocational or occupational education, whatever the institution might be, must

now work together in reforming American education to make the schools truly relevant and meaningful for every student, and, as Commissioner Marland has stated, "that's what career education is all about." I should hope that this seminar may be considered the beginning then of a long and very close working association between the State Directors of Community-Junior Colleges and the Bureau of Adult, Vocational, and Technical Education.

CAREER EDUCATION -
AN EDUCATIONAL CONCEPT

By: Keith Goldhammer*

Career education begins with the basic question: What is education all about? The basic problem in American education today is that we have not been able to answer that question. For more than a century we have struggled with it. We have seen the tides of educational philosophy and the pendulum of educational practice swing back and forth between the "pure" academic emphasis in education and the concern for the relevant problems faced by maturing individuals as they seek to find their places in society, meaning to their lives, and realistic aspirations for their attainment. Finally, in this decade, the problems of human and social integrity and health have forced us to a decision. The model of education to this date has been based primarily upon the assumption that education is the transmission of knowledge. Within this conception, education has become increasingly irrelevant and increasingly decadent. We have witnessed schools turning away those students who are in most need and frustrating those to whom the knowledge transmission functions as such have become increasingly irrelevant and unmanageable.

What we have been searching for is an answer to the question which redirects the education of our children and youth so that they can become increasingly capacitated to deal effectively with the environment of which they are a part. We can no longer avoid the fact that education must accept a new model--one which directs the resources of the school to help children become contributing, participating, fulfilled citizens of our society. That model, we believe, is finally emerging within the rubrics of career education. In a publication which Dr. Robert Taylor and I have edited, and which will be off the press in April, a number of dimensions which describe that model and suggest the means through which career education can be established have been identified. I would like to review these briefly with you because I believe that they best describe what career education is all about.

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*Dr. Keith Goldhammer is Dean, School of Education, Oregon State University.

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Dimensions of Career Education

Career education, so conceived, is not just another addition to the present curriculum. When fully developed, career education will constitute a new paradigm governing the practice of education at all levels and may result in the restructuring of the total educational program. The change does not have to be revolutionary. Career education can be achieved through evolutionary stages as it is integrated within the current curriculum. Cumulative change can take place resulting eventually in the restructuring of the educational program, based upon experience and the validation of the various elements.

Although there are different patterns through which this restructuring may emerge, experience in formulating approaches to career development and research on the nature of structured programs of career development suggest that there are some general principles or dimensions which will foster the fullest development of career education. The guidelines, which appear to be most significant at the present time are not discrete but suggest the interlocking and interacting nature of the elements of career education.

1) Career education incorporates a view of the curriculum as an integrated and cumulative series of experiences designed to help the student achieve increasing power to make relevant decisions about all his life activities and increasing skill in the performance of all of his life roles. An integrated curriculum suggests that instead of experiences being presented in independent, separate, subject-matter modules, there is an attempt to relate all experiences to some central objectives. Each area of study or experience should contribute to the improvement of the student's capabilities. The total curriculum can thus be viewed as having a cumulative impact upon the learner. Each successive learning activity can be built upon the previous experiences, the level of accomplishment of the student, and his revealed needs. Each new experience should be a step toward his next stage of development, particularly with respect to his achieving increased capability to make relevant decisions about his life career and his acquiring increasing skills in all of the areas related to his life roles. Particular emphasis should be placed upon his skill development and the use of the tools and techniques of learning as well as those related to occupational competence. The sequencing of educational experiences should be on the basis of each learner's needs, not a preestablished curriculum and timing for learning sequences should be individually paced, not a rigid adherence to grade level norms.

2) Career education in the elementary grades should attempt to achieve pupil awareness of himself and of the opportunities available in the universe of productive human affairs. A primary

conception of career education is that when an individual is able to synthesize a realistic awareness of himself, his potentialities, his aspirations, and his limitations, along with a realistic perception of the career opportunities available to him both in the broader world and the world of work, he will then, with proper guidance and through relevant learning experiences be able to make appropriate decisions about his own life careers. The first stage in his developing decisional capability is awareness of these two basic ingredients: himself and the world of career opportunities. An essential aspect of his awareness is his recognition of the social contributions made by all occupations and professions.

3) In the middle grades, career education should emphasize pupil exploration of clusters of occupations to determine the possibility of his selecting a particular career within a general field or cluster. Particular emphasis should be placed upon his exploration of various clusters and the preparation requirements and educational opportunities available for his obtaining the necessary training for those of particular interest to him. Inherent in his exploration of various career clusters is an opportunity for him to acquire "hands-on experience" as he experiments with the actual activities, tools, processes, and materials related to the occupations which are involved. The purpose of this exploration and experimentation is to help an individual determine the most desirable fit between himself, his potentialities and aspirations, and the requirements of the careers which he considers within the realm of his possibilities. During this exploratory process it is essential that the student investigate not only the requirements of careers themselves but the whole range of associated implications of all careers for his total life-style and the potentialities and limitations for his other life roles.

4) In the senior high school the student should begin to narrow his choice to a specific level of job, or to a specific occupation, and engage in initial vocational preparation. Some students will complete job entry preparation in the high school and upon exiting will enter the job areas of their choice. For other students the high school will provide an opportunity for the further refinement of career choices and the foundational learning experiences essential for entrance into occupational or professional preparatory programs on the post-high school level.

5) Post-high school educational programs are necessary to provide for two specific career education functions. First, extensive opportunities must be provided to enable students to obtain the preparation they need for entering into the vocation of their choice. Second, post-high school opportunities must be available for helping individuals recycle into another occupation after some experiences on the job, or to gain training for an advanced level of employment within the career cluster area in

which they are working. The emphasis of post-high school institutions upon career training in no way lessens their responsibilities for the provision of the necessary programs in general education.

6) Throughout all of the grades, the emphasis upon career education should not detract from general education needs of students. Career education should provide a focus for the education of each child, centering concern upon an orientation toward careers. The child's general education should be directed toward building competence in his roles as a citizen, a member of a family group, and a participant in avocational, aesthetic and religious activities. If the instructional experiences are properly integrated and developed from a cumulative perspective, the general education program should be more meaningful and significant to the students because it is related to their ongoing life concerns rather than unrelated as is generally true at present.

7) In the career education program, the distinction between the academic and the vocational curricula will be erased through emphasis placed upon the career development of all students. No tracks are maintained, and the program for each student may be developed in accordance with his individual career development needs. Consequently, under career education there is only a single curriculum, and differentiation is provided for each student according to his own basic requirements.

8) Career education necessitates the reorganization of the content of the total curriculum to include the experiences and knowledges needed by students (a) to develop understanding of themselves as members of society, (b) awareness of the world of work and human affairs, (c) skill in making decisions about future careers, and (d) skill in performing basic job processes and the use of relevant tools. The existing curriculum is built primarily around discrete subjects, and requirements are determined eclectically in the form of "how much" of each subject the student needs. In career education, there need be no courses required per se. The four elements of the curriculum I have just suggested are related to the capabilities which students should develop to become fully capacitated members of society.

9) A successful career education program involves the adaptation of all instructional content, material and processes for the individual needs of each child. Educational philosophy has long held that the child and his needs should be the central focus of the curriculum and all instructional elements should be related. In practice, however, the curriculum, instructional materials and instructional strategies have been developed without reference to the child and his unique needs. The concept of career education requires the development of a curriculum approach which is individualized in accordance with the capacitating needs of children.

10) Although chronological age may continue to be the basis for administrative grouping of children, grading as such should be of minimum importance. The main criterion for structure of the pupil's time should be the provision of experiences through which he grows in ability to determine his future career goals. A pupil's program at any grade or age level should be determined by his revealed needs. Obviously, in a large school there are some natural groupings into which pupils with particular needs seem to fall. Based upon careful clinical observation of the child and diagnosis of his needs, the use of standardized tests, and the observation of his behaviors both in and out of school, he should be assigned to particular individualized or group experiences which seem best to serve his purposes. Multi-purpose groupings should be established to serve both the basic learning and the career development needs of the students. Almost complete flexibility in scheduling and programming is essential in order to fulfill this requirement.

11) Harry Broady has suggested the distinction between descriptive and applicative knowledge. Descriptive knowledge is that which merely describes or explains phenomena. Applicative knowledge is that which interprets knowledge in its relevance for the solution of problems and the development of strategies which an individual employs to achieve his goals. In the contemporary school, emphasis is placed upon descriptive knowledge, or knowledge as an end in itself--a search for some abstract concept of truth. But in career education, emphasis should be placed on applicative rather than descriptive knowledge. Students will be helped to find the knowledge and tools they can use to achieve social and personal competence so as to attain a state of capacitation and self-fulfillment.

12) Career education requires the development of a clinical mode to the restructuring of the schools. The major characteristic of this mode is the emphasis upon the diagnosis of the needs of each child, both for his self-fulfillment and for his capacitation as a contributing member of society. A clinical mode implies that professional resources within the school will be used both to diagnose individual needs and to make individual prescriptions to help the student progress toward his career development objectives.

13) The clinical implications under career education suggest that teachers, counselors, resource persons, aides, and special education specialists should be employed to form teams to establish the basis for the proper diagnosis of student needs and the formulation of prescriptions for instructional interventions to improve a student's power to cope with his needs. This mode for the structuring of instructional resources within the school necessitates the viewing of the teacher not as a purveyor of knowledge, a disciplinarian and an evaluator to determine how much knowledge the students actually acquired, but rather as a diagnostician, a

prescriber of instructional strategies and interventions, a preparer of materials and assessor of child growth and development. Career education has the possibility for developing a true differentiation of instructional roles based upon a set of educational imperatives within the school, rather than a differentiation related primarily to training and salary levels. This differentiation includes the use of professional personnel in specialized roles within the school and, obviously, requires a new paradigm for all teacher education programs.

14) As previously intimated, requirements within the school should be stated in terms of performance capabilities of students and the decisions which they are expected to make. Performance capabilities cannot be measured in terms of standardized, subject-matter achievement modules. Performance capabilities must be in terms of what the student is capacitated to do as a result of the career development and personal life decisions he has been helped to make.

15) Student accomplishment, then, should also be determined in terms of the student's increased power to make relevant decisions about his life careers and to gain the skills and understandings essential for success in them.

16) In the career education program, the success of the school should be measured in terms of the performance capability of its students, particularly with respect to the manner in which they conduct themselves in roles outside of the school and the way in which they are capacitated to perform their future roles. The criteria used to assess the success of the school now are fictitious. The scores of students on standardized achievement tests, the number of students attending post-high school educational institutions, the honors which athletic or other teams bring back from contests, and the positions to which students are elected in college are not true measures of the school's success. The truest measure of the school's success is what it has done for the most disadvantaged child or the child with the greatest barriers to learning. Emphasis upon performance capability of all students in real life situations requires that the school take into consideration the total range of students' needs rather than catering primarily and giving highest honors to the most elite group within the school.

17) Each student's program should be developed to help him obtain among other things, saleable skills before exiting from school. The most tragic aspect of the present practice in education is that students now exit from school with little emphasis placed upon their employability. No matter at what level of competence a student may eventually be able to enter the job market, a mark of his career development is his ability to provide for his own sustenance first at a lower level of requirement. Whether

or not the student uses his job skills is not as essential a consideration as the fact that he has them, can use them to secure economic independence and has them available in the event he or members of his family face emergencies which require their use.

18) In career education, the school must assume responsibility for the placement, continuing guidance, and advisement of each existing student. The school can no longer consider its job done when the individual leaves either before or after graduation. To assess the validity of its program, it must follow through with the student to see how he uses the instruction which the school provided, and it must have means through which it can help the student when he seeks or needs assistance in furthering his career development. The modern school must be available to the student for all of his educational needs at every period in his life.

19) The school must be "of the community." It should use the resources of the community in the instructional program to extend its instructional capabilities. It should help students plan in conjunction with their parents. It should coordinate the use of other agencies in the community which are also concerned with the proper development of children and youth. It should develop programs through which the educational needs of all people in the community can be met. It should use community channels both to assess the reality of its programs and to appraise the effectiveness of these programs in furthering of public purposes in the support of education. Schools with adequate career education both use their communities and provide opportunities for all their citizens.

Conclusion

In conclusion, career education changes the basic paradigm on which the curriculum is established and instructional strategies are formed. The objective of the school is the total capacitation of the child so he can become a contributing, participating, self-respecting and wholly fulfilled member of society. Career education is centered upon the sociologically and psychologically verified fact that an individual forms his total life-style and gains his identification as a human being within the social fabric as a result of his achieving recognition and competence in the roles related to his earning a living and contributing goods or services for the well-being of his fellowmen. Career education is based upon the principle that knowledge is a tool for humans to use to achieve their aspirations and to make society increasingly better. Career education is an alternative to the rituals of playing polite academic games in school, and an endeavor to make the school experience a vital and relevant institution designed to facilitate human purposes and human goals. The result will be a citizenry who are turned on to make democratic society a reality

for all, a citizenry who are capable of coping with the realities of their existence, a citizenry who because of their own mental health, contribute to maintaining a healthy society. The challenge to our society cannot be avoided and had better not be abrogated. In the final analysis, this is what education is all about.

SCHOOL BASED COMPREHENSIVE CAREER EDUCATION MODEL

By: Bruce Reinhart*

Over the past several years, many supporters of public education have expressed a need for helping our youth obtain the basic skills, knowledges, and values that will be essential for success in any career they might choose. It is generally conceded that in order to engage the interest and desire to learn in young people, we must find new ways to make learning personally meaningful to each student.

To achieve a meaningful curriculum, one of the things the schools must do is to give academic education programs a massive infusion of illustrations from the world of work. The vast majority of students in our schools need to have subject matter related to what concerns them in real life. Teachers at all levels must be trained and guided to "plow up" their subject area fields and fill them with relevant materials. Beginning at the elementary level we must bring into the teaching process examples of how the concepts, symbols, and language of the particular disciplines can be used in everyday life, and more particularly, in careers. Students must read about and write about something that is relevant to them. The world of work can well provide this relevance. If we can do those things perhaps we won't have to answer some of the following questions:

1) Why aren't 15,000 hours enough for career preparation? Youngsters that progress through our school systems from kindergarten through twelfth grade have approximately 15,000 hours of school experiences. It seems inconceivable that a student will spend 15,000 hours in school and then upon graduation be told that he must spend more time in school or an educational experience to be prepared for a career.

2) Why do 30 percent of the students drop out? Of the students who began our school systems in kindergarten only 70 percent finish the twelfth grade. What are the causes of 30 percent rejection of the system? If business and industry had a 30 percent

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rejection rate from their production line, they wouldn't be in business very long.

3) Why is the relevance of school questioned? Why do students have to ask "Why do I have to learn this?" Relevance should be completely obvious to them.

4) Why are most school courses designed for 20 percent of the students? Of the careers that people pursue, approximately 80 percent of the jobs do not require a college degree. However, if one looks at our public school offerings he will note that approximately 80 percent of the students are in college preparatory programs.

5) Why do people enter careers by chance rather than design? It seems that if a person were provided the right experiences and data throughout his school experiences he would be able to make career direction-setting decisions and be the captain of his own destiny rather than be directed by circumstance.

The purpose of a comprehensive career education system is to help alleviate the problems which cause these questions to be asked. Specifically, the requirements of such a program are to provide a relevant kindergarten through twelfth grade educational program around a central theme of career development. It must:

1) Restructure the entire educational program around the real life development needs of students.

2) Integrate the academic knowledges and skills with occupational training.

3) Assure that each exiting student will be prepared for further career education programs or for entry into an occupation.

4) Provide for each student a program relevant to his becoming a self-fulfilled, productive, and contributing citizen.

5) Incorporate community resources in nonschool educational opportunities.

A comprehensive education model should have certain key outcomes in terms of student performance. Each student progressing through a model program should:

1) Know and appreciate his own capabilities.

2) Have made a viable career decision with respect to education and employment.

3) Possess saleable skills which are basic and functional.

4) Relate positively with others and to responsibilities.

5) Understand the economic considerations inherent in career decisions.

6) Relate career development to personal development.

There are several ways to develop and operate an educational system. The first method is the method presently used in most school districts. That is, to offer a disjointed and incremental educational system that is composed of a series of discrete blocks of academic subject matter. These academic blocks include such things as mathematics, natural science, language arts, etc. They are offered virtually as an end in themselves and little effort is made to integrate them and relate them to each other or to some unifying theme.

A second method of developing and operating an educational system is to unify the academic skills around a relevant theme or themes which appeal to the student. We propose that this core of relevance be career development. In such a system the academic offerings such as social sciences, natural sciences, mathematics, fine arts, language arts, health and physical education and specific career skill development be completely integrated around a relevant core of career development. That is, they relate to each other through the common goal of ultimate career development.

There are many ways that a career education system may be described. For the purpose of our career model project we have selected eight basic themes which lead to eight specific identifiable goals as a method of describing the general operational functions and outcomes of a total career education system. These elements and their associated goals which need to be achieved through a career education system, the home, and community life are as follows:

1) Self-Awareness. The entering student has some knowledge and attitudes toward himself, what kind of person he is and what he hopes to become. Let us call that self-awareness. Through career education and his home and community experiences, we want him to become involved in a planned, sequential process of self-assessment and self-evaluation which results in self-identity. That is, he knows who he is, what he is like and has developed a reasonably consistent internalized value system.

2) Career Awareness. The individual entering the schools possesses some knowledge about attitudes toward, and interests in careers. He knows something about career performances, associated life-styles, rewards, leisure time, working conditions, and the

education and training requirements possessed by some persons in some careers. Let us call that knowledge of careers, career awareness. Through education and home and community life, we wish to assist him in understanding the broad range of careers which are available not only as they serve him, the community, or society at large, but also what is involved in the development, growth, behavior, training, and rewards of persons engaged in specific occupations. From this broad understanding of careers, career awareness, we want him to experience active career exploration and preparation which leads to career identity. Career identity is defined as the individual selection of a role or roles within the world of work.

3) Appreciations/Attitudes. The element appreciations/attitudes was included as a means of focusing attention on the affective component of career education. Through career education and supporting systems, the individual should develop an internalized value system which includes valuing his own career role and the roles assumed by others. These appreciations and positive attitudes toward his own career role and the roles assumed by others in the society should lead to active and satisfying participation as a productive citizen; this, provides for both self-fulfillment and social fulfillment. Self-social fulfillment is defined as the internalization of a value system of the world of work with appreciations for his own role and the roles of others engaged in legitimate productive social roles.

4) Economic Awareness. The child has observed and participated in the economic system to some extent prior to school entry. Building upon this base of economic awareness, we wish to facilitate the students' systematic and thorough exploration of the economic system both as it relates to career development and the community and society at large. Economic understandings are defined as those conceptual elements and networks which make it possible for the child or adult to "read" the economic environment and solve personal and social economic problems.

5) Skill Awareness and Beginning Competence. The entering student is able to participate in some tool skill activities. Tool skills are defined very broadly to include all of the ways in which man extends his behaviors. He extends his ideas by means of language skills, drawings, crafts, performances, etc. He extends his ideas over time and space by the use of written communication, telephone, paintings, photography, and by building devices in materials. He extends his senses by the use of microscopes and telescopes, his physical capability and capacity by harnessing energy with the use of tools. Man engages in process applications by creating or imitating individual or group sequences for completing tasks. The career education program and its support system will provide opportunities for the student to participate in tool skill and process applications in order to provide for

employment skills. Additionally, this development will feed into the other elements of career education, making them more relevant.

6) Decision-Making. The entering student has some understanding of the decision-making process and possesses some decision-making skills. If he is able to understand cause and effect relationships he is ready to examine the decision-making process. Through career education and supporting school and life experiences, he will develop increasing skill and experience in the rational processes of decision-making, practice making decisions, and come to accept the responsibility for the outcomes of his decisions. The career decisions made during his progress through the comprehensive career education program will progress from very tentative and flexible career decision to decisions which are increasingly irreversible or reversible only at some cost of time, effort, or money. A student should reach a decision which represents a careers direction setting by grade 10, or early enough to provide for the development of entry level skill in a career plan prior to school exit. Career decisions are defined as career-direction-setting, the product of a rational process, a plan for immediate, intermediate, and long-term career development.

7) Employability Skills. Employability skills are those elements of career education which have to do with searching for, locating, and obtaining career placement both on an initial and advanced basis.

8) Educational Awareness. The entering student has some awareness of the relation between education and training, whether formal or experience-based, and the life roles assumed by self and others. From this basic educational awareness the student will continue to develop and refine a thorough understanding of the part all education and training plays in relation to the "real" world and the changing world in which he will assume a more complete productive participation. He will also come to recognize the need for specific education and training for specific career roles. Educational identity combines an understanding of the relation between education and training and life roles, knowledge of himself as a participant in education and training, his learning style, pace, capabilities and capacities, and the ability to select and evaluate educational avenues for the development of his career plans.

How might such a system be operationalized? A total comprehensive career education system extends beyond the twelfth grade. It begins at kindergarten and extends through all adult life. It provides preparation in the previously discussed facets of career development and provides for employment regardless of the level or the career aspirations one might have. Such a system might offer career awareness at the early grades that is, grades K through five or six. At that time, based upon the individual's needs,

abilities, his personal assessment, and intensive counseling and guidance, certain decisions are made by the youngster to explore a variety of career interests. This might be offered through a variety of educational units which allows the youngster to sample and have a better understanding and feeling for career goals, rewards, and expectations in those general areas. About the eighth or ninth grade seems a reasonable place to have another phase of intensive counseling and guidance in which the youngster assesses his interests, abilities, and performance in the exploration phase and begins to enter into a more intensive exploration of career options. Upon completing the twelfth grade, a youngster should be prepared for employment through the development of saleable skills and also be prepared for the next rung on the educational ladder of his choice. Youngsters who feel certain that they wish to enter a career upon the completion of high school should have the opportunity for intensive or in-depth career skill development. The point is, however, that there is not a tracking system. All youngsters who finish a career education program are entitled to placement in an entry-level job for which they were prepared in their school experience and are also entitled to be prepared for the next educational rung, if one is identified at that time, in the post-secondary educational experience of their choice.

One of the keystone concepts of a career education system is 100 percent placement. That is, every youngster is entitled to placement upon completion of the system either on the job, in a non-baccalaureate post-secondary educational program or a baccalaureate program consistent with their career goals and abilities.

There are a number of ways that such a comprehensive career education program might be designed. We have chosen to use a career development program matrix. This matrix displays the eight previously identified elements along one axis and the grades kindergarten through 12 along another axis. In the cells of the matrix, goals for that particular matrix element and grade level will be identified, performance objectives related to that goal developed and performance criteria for measuring the degree to which the behaviors are developed will be identified. After completing this program matrix in cooperation with the participating pilot test districts, curriculum materials and educational treatments units will be identified that have a high potential for developing these behavioral changes in youngsters. These curriculum units and educational elements will then be pilot tested in pilot test sites for further validation before final installation as a total career educational model.

The Comprehensive Career Education Model Project, conducted by The Center for Vocational and Technical Education as a prime contractor to the U.S. Office of Education, is presently working with six pilot school districts in the development of a comprehensive career education model. These six districts are: Pontiac,

Michigan; Jefferson County, Colorado; Los Angeles, California; Mesa, Arizona; Atlanta, Georgia; and Hackensack, New Jersey.

The present plans are for this project to identify appropriate career oriented curriculum materials and educational strategies that will be individually pilot tested and validated in the six school districts during the Spring of 1972. Installation of the career education model will be made in these six school districts beginning in September, 1972. After validating the curriculum materials and program strategies, the results of the model--including curriculum materials and back-up systems guidelines--will be made available to other interested school districts for their installation and adoption.

Although we are working only with the kindergarten through the twelfth grade in program planning this first year, that doesn't mean that the post-secondary program aspects of the project aren't equally important. Funding and resource limitations restricted us to grades K-12. We propose to move into the post-secondary program area with this project within the near future.

At this early stage of preliminary planning, we see certain broad project tasks that must be accomplished relative to an interface with post-secondary education. These are as follows: (1) cooperating post-secondary institutions must be identified who wish to participate in this bold project; (2) systems must be designed to effect an interface between the secondary and post-secondary institutions (student data, guidance, curriculum, etc.); and, (3) in-service training must be accomplished that will enable participating faculty and staff to fill their new roles.

There are several career education implications for post-secondary institutions--especially community colleges. These are: (1) it is expected that more mature and goal-oriented students will be enrolling in the community colleges. These students will have completed some degree of career education and will have made some career direction-setting decisions and will pursue these decisions; (2) there will be a greater enrollment of students in post-secondary programs particularly sub-baccalaureate programs in vocational-technical schools, technical institutes, and community colleges; (3) there will be a greater demand for occupational education programs in community colleges; (4) there will be a greater demand for articulation between post-secondary occupational programs within the community college; (5) there will be a greater demand for cooperation, articulation, and planning between secondary and post-secondary institutions. This might take the form of shared faculty and facilities. It will probably include a demand for advanced standing and transfer credits from high school students who have completed certain assumed courses in high school; and, (6) there are implications for more complete student data and support systems in the post-secondary institutions.

This includes student placement and follow-up systems, adult re-training facilities, follow-up data for curriculum planning, and revision, student counseling and guidance data, and curriculum support data for faculty.

PART IV

Research and Development Reports

COMPREHENSIVE INFORMATION SYSTEM FOR OCCUPATIONAL EDUCATION

By: Paul V. Braden*

Problem

By and large, state and local vocational-technical education systems have not been able to respond decisively and knowledgeably to the swiftly changing requirements of society and the economy. Effective tools for obtaining the desired alignment have not been generally available, and linkages with other agencies involved in manpower planning and development are usually weak. Efficient and adaptive information systems are clearly needed by vocational-technical education decision-makers at the state and local level if necessary changes in the patterns of occupational offerings and enrollments are to be effectively identified and promoted.

CIS as a Response to the Problem

The Comprehensive Information System for occupational education (CIS) is being designed to respond to the needs identified above. The primary objective of this system is to provide comprehensive data collection and analysis to education decision-makers on a statewide and local basis in order to (1) assist in identifying and motivating those who might benefit from vocational education, (2) enhance the probable labor market success of program graduates and dropouts, (3) provide an information base for developing a more cost-effective training program mix, and (4) provide a central source of data for encouraging interagency based manpower planning efforts. Secondary objectives include, first, assistance in facilitating the accountability of vocational-technical education to its clientele, advisory groups, and administration boards and, second, the provision of data required for Office of Education (OE) reporting and for the state plan for vocational and technical education.

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Overall Design

The system itself readily divides into two subsystems (see Figure 1):

1) The Evaluation Information Subsystem will collect, process, and evaluate data useful to program administrators, clients, and potential clients including cost-effectiveness and USOE reporting information, and

2) The Strategic Planning Information Subsystem will identify the goals and objectives of the vocational education system, and provide alternative allocation strategies for the achievement of the objectives.

The first of these two subsystems, the Evaluation Information Subsystem, is comprised of seven information components. The seven information components, manpower supply, manpower demand, underdeveloped human resources, follow-up, cost, resources inventory, and program data, which are described individually below, constitute broad, discrete categories of information which are to be collected, analyzed, and reported. While useful in itself for reporting and accountability purposes, the information treated in the Evaluation Information Subsystem is utilized further as essential inputs to the Strategic Planning Information Subsystem. The total system provides mechanisms for utilizing the evaluation information in the activities of setting goals and objectives, and of determining alternative resource allocation strategies. Goals and objectives, and alternative resource allocation strategies are the two components of the second subsystem, the Strategic Planning Information Subsystem.

The Evaluation Information Subsystem

The seven components of the evaluation subsystem are individually described below.

Manpower Supply. The manpower supply component will collect, analyze, and report data pertaining to the output and subsequent labor market behavior of students from the vocational educational system (including private schools) classified by U.S.O.E. and O.E.S. occupational codes. In addition, other supply data, such as on-the-job training, apprenticeships, etc., will be collected insofar as such is feasible within project cost constraints. Exemplary data include breakdown by geographic area, age, sex, and potential enrollee interests, aspirations, and aptitudes. The manpower supply component provides information that is considered critical to resource allocation decision-making by providing a complete or partial basis for the following analyses: net manpower requirements, characteristics of the population being served, and program effectiveness for clientele subgroups.

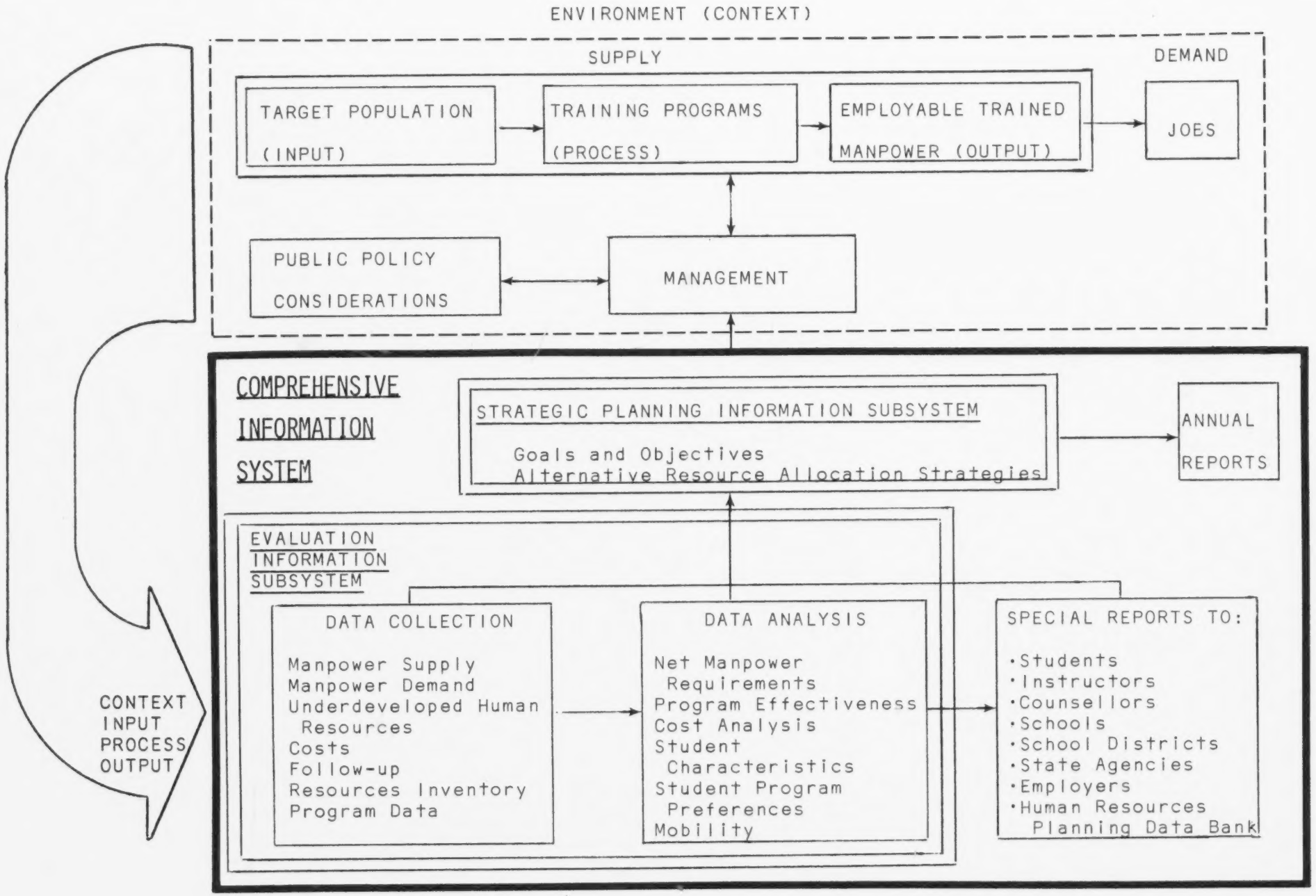

Figure 1
Conceptual diagram of Comprehensive Information System for Occupational Education

Manpower Demand. The manpower demand component will collect, analyze and report current and projected occupational employment wage and task analysis information. Data sources will include the vocational education system personnel, state employment commission, CAMPS committees, and the U.S. Department of Labor. Techniques considered for the collection and development of such data include employer surveys, extrapolation of past trends, utilization of the Bureau of Labor Statistics industry-occupational matrix technique, and follow-up surveys of graduates and dropouts. The principle contribution of the demand component to resource allocation decision-making will be to analyze net manpower requirements by state and substate regions. The demand component, through task analysis, will also make a major contribution to curriculum planning efforts. And the rapport established between industry and educators will facilitate placement efforts and help make counseling more realistic.

Underdeveloped Human Resources. The underdeveloped human resources component will collect, analyze and report community survey data which will identify persons who are unemployed, or underemployed, and who can benefit from training. The component will also include a model for forecasting population by age group, socioeconomic background, and geographic location based on census data. Program planning will be facilitated both by the population data which will identify parameters of the magnitude of need for programs and by the survey data which will identify a base of regular and special training needs.

Cost. The cost component will collect, analyze, and report the cost base for cost-effectiveness analysis (useful in designing more efficient programs), as well as the data necessary for estimating resources required for postulated program expansions. This component will assess the feasibility of generating, on a continual basis, past and future specific program costs: e.g., the cost of the nurse aid program per graduate in specific institutions, rather than the average state cost for health occupations program.

Follow-Up. The follow-up component will collect, analyze, and report information on the post-schooling experiences of graduates and dropouts. Data collected will include information on the former student's occupation and its relation to the training program, income, and geographic mobility, as well as data on job satisfaction, need for retraining, and career ladders. The follow-up component will contribute to resource allocation decision-making by providing a basis for adjusting net manpower requirements and for evaluating program effectiveness.

Resources Inventory. The resources inventory component aims at compiling an inventory of all physical and human resources available to decision-makers at local, regional, or state levels.

Included in this inventory would be the following kinds of data pertaining to current and potential use of such resources:

1) staff, by age group, sex, education qualifications, work experience, program, and school;

2) buildings;

3) equipment;

4) curricular software; and

5) other non-fiscal resources.

These data will be critical for determining the resource constraints for program expansions.

Program Data. The program data will be collected to provide administrators a clear understanding of the general design of their education system. In addition to traditional service area descriptions, the component will collect data by USOE code specificity on variables such as day versus evening classes, institutional versus cooperative modes, and whether the program is modular or not in its format. Included in the program data to be collected, analyzed and reported will be such indicators of program quality as staff qualifications, advisory committee involvement, degree to which planning exists, program duration, special and regular needs being served, utilization of facilities, out of class experience provided, and utilization of guidance services. Program data will contribute to analysis of program effectiveness.

The Strategic Planning Information Subsystem

The Strategic Planning Subsystem is comprised of two components.

Goals and Objectives. The goals and objectives component will provide a mechanism by which management and advisory group personnel can identify goals and objectives and weight them as to their relative importance. Goals are considered to reflect the underlying philosophy of the occupational education system, while objectives represent specific measurable benchmarks against which achievement can be appraised. Goals and objectives are critical to the analysis of program effectiveness and, as weighted, also critical to the selection done from among alternative resource allocation strategies.

Alternative Resource Allocation Strategies. The alternative resource allocation strategies component will provide a set of alternative resource allocation strategies, these alternatives

consisting of several sets of program enrollment and financial outlay structures, each designed to satisfy an alternative set of priorities. The strategies will be designed to implement the objectives, and, hence, will be developed for procedural compatibility. Information required to formulate strategies (e.g., relative efficiencies of alternative vocational education programs, program cost, labor market requirements, and student interest) will be supplied by the Evaluation Information Subsystem and the goals and objectives component.

HIGHWAY SAFETY

By: Ron Daugherty*

Introduction

The following slide and taped narration is a summary of a project recently completed by The Center for Vocational and Technical Education. The project was entitled "Expansion of Vocational-Technical School Programs To Accommodate Highway Safety Manpower Requirements." The following is the narration script of that program:

This is America. Her People. And Her Land. These are America's major transportation systems. The highway system serves as the major mode of transportation, and these are some of the vehicles traveling America's highway system. Put these all together and they spell progress. Progress in terms of our economy. Progress in terms of living standards for our people. Progress in terms of sociological mix of our people. This combination of people, vehicles, and highways spells problems for our country. Problems in which over 50,000 of our fellow Americans are being killed on our streets and highways each year. That is more than 1,000 people a week. Ten thousand people are being injured daily in street and highway accidents. Over $13 billion is lost to our economy from property damage and decline in production.

It was to these problems that the U.S. Congress addressed two Safety Acts in 1966. The Highway Safety Act and the Motor Vehicle Safety Act. The 1966 Highway Safety Act provides, in part, "Each state shall have a highway safety program approved by the Secretary (of the Department of Transportation) designed to reduce traffic accidents and deaths, injuries, and property damage resulting therefrom. Such programs shall be in accordance with uniform standards promulgated by the Secretary . . . " By November, 1968, there were 16 such standards listed.

One obvious problem surfacing during implementation of these standards was the apparent lack of trained manpower to carry out the safety standards. Three recent national surveys by the

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Department of Transportation identified a number of highway safety occupations or functions in which there now exists a manpower shortage, or where a shortage will likely occur within the near future. The surveys provided evidence that 75 to 80 percent of these occupations or functions are skilled or at a technical level requiring specialized education that does not normally result in a baccalaureate degree.

A project was undertaken with two main objectives: first, to determine what is being done to train highway safety personnel in the public vocational and technical education system, and second, to determine the potential this segment of the nation's education system has for preparing the trained manpower necessary for highway safety. The project was conducted by The Center for Vocational and Technical Education, The Ohio State University, for the National Highway Traffic Safety Administration (NHTSA) and The Department of Transportation. The views or opinions expressed in the program do not necessarily represent those of the National Highway Traffic Safety Administration.

The project objectives were accomplished by a thorough search of the related research literature, curricula, reference material literature, a survey of all states to identify existing programs, a survey of all identified programs to secure curriculum materials and an in-depth study and recommendations from 60 selected vocational and technical educators. Several significant conclusions were drawn from the findings of the project. The generalized job titles identifying highway occupations represented total jobs or certain job functions within a total job. Also the job titles used to identify highway safety occupations were absent within the standard references for occupational classifications. Under the 1968 Amendments to the Vocational Education Act of 1963, vocational-technical education is charged with developing competent manpower for all occupations considered at a nonprofessional level. Some specific highway safety occupations do not have existing identified vocational-technical education programs or courses but should be developed on a priority basis. For example, the emergency medical technician is an essential link in the medical team. The lives of those injured in accidents may depend on the expediency with which they are removed from the wreck, delivered to the hospital, and the care they receive enroute. Motor vehicle inspectors are needed to diagnose hazardous conditions of motor vehicles resulting from normal use, abuse, defective construction, improper maintenance, or poor quality of original parts or repair parts. The alcohol breath examiner speicalist is vital in identifying intoxicated drivers who, because of impaired driving abilities, kill more than 25,000 people each year and injure 800,000 more.

The highway safety engineering technician is the engineer's specialist in the safety features of designing, oonstructing, and

maintaining the streets and highways. The traffic engineering technician assists in the technical aspects of traffic flow, and traffic control devices and methods. He is responsible for communicating to the driver the safest way to proceed on the roadway. The engineering technicians are responsible for the driving environment in which you operate your vehicle. Transporting millions of our youth to and from schools each day is the responsibility of thousands of school bus drivers. These people are responsible for the safety of their passengers and the control of other traffic on the roadways for safe operation of the school vehicle.

The accident site investigator is responsible for collecting all the data on accidents. He obtains evidence of factors causing highway accidents and tries to correct driver deficiencies, vehicle deficiencies, and faulty roadways. He is a specialist that will supplement the policeman's role in collecting information for legal reasons. Driver education has become a very important addition to the curriculum of public and commercial schools. The teacher aide for the public driver education programs and the instructors for the commercial driving schools can be prepared through the vocational and technical education program.

Only recently have we recognized the need for pedestrian safety specialists on local municipal government payrolls or for large shopping centers. The pedestrian can be as detrimental to the safe operation of a vehicle as the vehicle can be detrimental to safe pedestrian movement. A well trained driver license examiner is essential to separate those unprepared or incompetent individuals from those individuals who should be granted the privilege to operate a vehicle on the public roads.

The debris hazard control specialist is fast becoming an essential link in the highway safety picture. Not only must he remove the normal debris from accidents and other sources, he must know how to cope with such extremely dangerous debris as radioactive, caustic, or inflammable materials. The traffic records analyst is a specialty job emerging through the fast accumulating data necessary for efficient and effective operation of our streets and highways. The traffic patrolman is another specialty that is emerging from the tasks of the policeman as we have known him in the past. This highway safety occupation has many dimensions and is related to a large number of the established highway safety standards.

It was also concluded that most post-secondary occupational preparation institutions presently offer a basic program or curriculum whereby one or more of these highway safety occupations just identified could be trained for as an optional specialty. On a limited basis, specialty programs are now offered at post-secondary institutions for training emergency-medical technicians, highway safety engineering technicians, and traffic patrolmen.

The project identified and documented in the Vocational-Technical ERIC system over 100 different sets of curriculum materials for training in highway safety occupations.

Some of the major recommendations made to the U.S. Department of Transportation were: highway safety representatives should be on state and national vocational and technical education advisory committees. These committees should have data indicating manpower needs, forecasts, and present training capacities for highway safety occupations. A team of state and local highway safety authorities and vocational-technical educators should be drawn together in those states with the greatest highway safety manpower needs to develop a statewide plan for highway safety manpower development. The vocational and technical education authorities at the local and state levels should work with highway safety authorities to determine the priority of highway safety manpower needs in relation to other local and state manpower needs. Additions or revisions in the *Dictionary of Occupational Titles* and the U.S. Office of Education Occupational Codes list should be made to identify the occupations within the highway safety area. This should aid in standardizing the occupational classifications within the highway safety work force and the acquisition of data necessary for training and manpower development.

The NHTSA should continue to develop task analysis for each highway safety occupational category and to provide these analyses to agencies or institutions for the purpose of developing an instructional analysis and implementing an educational training program. Additional NHTSA manpower development funds should be made available to gather manpower data and to perform job and task analysis. This information would serve to facilitate the appropriate expenditures of other manpower development funds within highway safety occupational preparation. Highway safety specialists and authorities should assist local vocational and technical education administrators to identify the priority needs in highway safety occupations, to identify the occupational classifications, and to specify the local job openings available for trained people in these occupations. Additional literature and informational programs identifying career opportunities in the skilled and technical highway safety occupations should be developed and made available to potential students, school counselors, and parents.

Career opportunities in highway safety occupations should be written into the occupational exploration and orientation curricula being developed by many school systems for the kindergarten through tenth grade levels of education. The public education system for vocational and technical education should be called upon to provide manpower development for those highway safety occupations with the greatest priority needs and for which this level of training is most applicable. The programs may range from

the two-year associate degree level to a certificate program to a short course for upgrading or retraining. The educational program must be designed specifically to prepare individuals for identified job openings or needs. Vocational and technical education funds should be provided to expand, extend, and/or develop highway safety occupational programs where identifiable local and state priorities so indicate. Several of the highway safety occupational programs would be appropriate expenditures of "new and emerging occupations" funds from the 1968 Vocational Education Amendments.

Competent highway safety operations people with an interest in and qualifications for teaching in training institutes should be identified as possible instructors for future occupational preparation programs in highway safety. Newly developed NHTSA instructional materials should be planned and workshops held to expedite updating and development of occupational preparation programs. A task analysis study should be made for each of the highway safety occupations to determine the commonality of tasks among the various occupations. If sufficient commonality does exist, core curricula should be developed for efficient and effective training programs. All future course guides, instructor's manuals, and other curriculum materials for highway safety occupational programs should be documented in the Vocational and Technical Education Resource Information Center (ERIC). This documentation will enable educators to have access to the materials through the ERIC dissemination system and through the *Abstracts of Instructional Materials* published by The Center for Vocational and Technical Education, The Ohio State University.

More detailed findings, conclusions and recommendations can be found in the final report entitled *Expansion of Vocational-Technical School Programs to Accommodate Highway Safety Manpower Requirements* as submitted to the National Highway Traffic Safety Administration. A corresponding publication by Daugherty, Brooks, and Hyder is available through The Center for Vocational and Technical Education, The Ohio State University. This reference was written as a guide in developing occupational preparation programs for highway safety.

This country's transportation system is the most sophisticated known to man. Within this sophistication, safety has loomed as one of the major drawbacks. It is clear to highway safety specialists and educators that our public education system, and more specifically, our vocational and technical education programs, has a significant contribution to make in providing the much needed trained manpower to overcome some of those problems in safety. The trained manpower will implement safety standards and make safe our nation's streets and highways for you and your family.

Summary

We present this to you state directors for the following reasons:

1) We want you to be aware of this group of emerging occupations and to point out the additional safety occupations that seem to be appearing rapidly.

2) We want you to see this group of occupations as an approach to relieve one of our society's greatest ills, killing and maiming on our streets and highways.

3) We want you to become acquainted with the most complete resource manual in highway safety occupational training materials and programs that is available for vocational educators today. The guide entitled "Highway Safety Occupational Program Development Guide," should be useful to a number of people on your state staffs as well as local post-secondary program administrators and instructors. It is to be sent to you through the U.S. Office of Education and the U.S. Department of Transportation.

4) We thought this program could serve to alert you, if you don't already know, that the governor of each of our states has designated a highway safety representative to direct highway safety activities for the state. He, too, has received a copy of this guide and just may begin asking questions about what your programs can do to train people for highway safety.

5) We want to alert you to the fact that highway safety monies, section 402 of the Highway Safety Act, are available to the states for manpower development. However, these funds are very limited and will probably continue to be so for the foreseeable future. Therefore, the vocational-technical funds are suggested as a major source of revenue.

6) We want to influence you to consider giving occupational training in these safety occupations a much higher priority in your state plan than has been the case in the past.

7) We want you to know that The Center will be involved in accident site technician teacher training during the next nine months.

OCCUPATIONAL INFORMATION FOR CURRICULUM DESIGN AND REVISION

By: Frank C. Pratzner*
John Joyner**

This is a progress report on a research study being conducted at The Center for Vocational and Technical Education located at The Ohio State University. The title of the project is "The Use of Occupational Information for Curriculum Revision and Design." The total project is not scheduled to be completed until January, 1973. The report I will present concerns the first phase of the project, that of how to collect occupational performance data using the Air Force Task Inventory procedures. The second phase of the study will deal with how to use this information for revising existing vocational and technical curricula.

The task inventory procedures are an application of the U.S. Air Force Occupational Survey procedures developed by the Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Lackland Air Force Base, Texas. This project is attempting to adapt these procedures for use with civilian occupations and to devise methods for using the data collected for revising existing curricula.

A task inventory is a list of appropriate duty and task statements covering the tasks performed by workers in an occupational area such as automotive mechanics, data processing, etc.

Diagram 1 shows a page from an automotive mechanics task inventory we have developed at The Center. It shows the duty and task statements as they are listed. The duty statement, "performing engine overhaul activities," is identified by the letter F and the task statements begin with numbers under the duty beginning with "adjust valves" and so on.

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AUTOMOTIVE MECHANICS TASK INVENTORY	Page 2 of _____ Pages	
LISTED BELOW ARE A DUTY AND THE TASKS WHICH IT INCLUDES. CHECK ALL TASKS WHICH YOU PERFORM. ADD ANY TASKS YOU DO WHICH ARE NOT LISTED, THEN RATE THE TASKS YOU HAVE CHECKED.	CHECK	TIME SPENT
F. PERFORMING - ENGINE OVERHAUL ACTIVITIES	✓ If Done	1. Very Much Below Average 2. Below Average 3. Slightly Below Average 4. About Average 5. Slightly Above Average 6. Above Average 7. Very Much Above Average
1. Adjust valves		
2. Check head for warp		
3. Check or replace exhaust manifolds		
4. Clean engines		
5. Clean engine parts and check for condition		
6. Diagnose valve train and head malfunctions		
7. Disassemble engines		
8. Fit piston pins		
9. Grind valves		
10. Inspect exhaust systems		
11. Inspect the crankshaft and connecting rod assembly using micrometers and other equipment		
12. Perform operational inspections of positive crankcase ventilation systems		
13. Perform operational inspections of engine lubrication systems		
14. Remove engines from vehicles		
15. Repair oil pumps		
16. Replace connecting rods and bearings		
17. Replace crankshaft and bearings		
18. Replace engine mounts		
19. Replace flywheel, muffler and/or tail pipe assemblies		
20. Replace flywheel ring gears		
21. Replace gaskets and seals		
22. Replace oil pumps		

Diagram 1

A task inventory contains a section for collecting identification and background information. Included are data concerning present job titles, type of business employed in, number of years of experience, and where training for the job was received. Additional questions could be added in order to collect further information to better describe the sample being surveyed.

The task inventory is also used to collect occupational performance information from workers. Generally, this is done by mailing the inventories to the encumbent workers as you would in any typical survey when the names and the addresses of the workers can be identified. The task inventory is constructed so that it can be self-administered so that a worker, such as a secretary or mechanic, can fill out the inventory by simply reading the tasks and checking the ones he or she performs. A duty composes a large segment of work performed by an individual. It is composed of several related task statements. For example, in the automotive mechanics task inventory, "maintaining and repairing cooling systems" is identified as a duty and includes the 15 task statements that comprise it.

(Diagram 2) Duty statements are designated by action words ending in "ing." There are generally two types of duties in a task inventory. The first type is supervisory activities such as supervising, organizing, planning, directing, implementing, training, inspecting, and evaluating. This type of duty statement is placed first in the inventory. The second type of duty statement concerns work performance activities such as performing, maintaining, troubleshooting, repairing, removing and replacing, adjusting, and installing. The work performance duties follow the supervisory duties in the inventory.

Diagram 3 shows the 17 duty statements we used in constructing our automotive mechanics task inventory. Notice that an object is frequently used with these action words in describing duties. For example, maintaining and repairing power trains, maintaining and repairing automatic transmissions. As you can see, we have defined 10 separate duties relating to maintaining and repairing various components of the automobile.

A task statement is the smallest unit or work activity defined in the task inventory. It forms a significant part of a duty. Although it is difficult to state all task statements at the same level, with practice, one can become quite skillful at writing task statements at approximately the same level or degree of accuracy.

It should be noted that task statements are expressed in similar terms, each beginning with a present tense action verb, such as repair, replace, analyze. The subject "I" is understood for each task statement and not stated at the beginning of each.

DUTY — TASK STATEMENTS

MAINTAINING AND

1. CHECK COOLANT FREEZING POINT.
2. CHECK COOLANT TEMPERATURE.
3. CHECK OVER FLOW TANK AND ACCESSORIES.
4. CHEMICALLY CLEAN AND FLUSH COOLING SYSTEM.
5. INSPECT, ADJUST AND/OR REPLACE FAN.
6. INSPECT AND/OR REPAIR BLOWERS ON AIR-COOLED ENGINES.
7. INSPECT WATER HOSES.
8. REMOVE AND REINSTALL RADIATORS.
9. REPLACE FREEZE PLUGS.
10. REPLACE RADIATOR AND/OR HEATER HOSES.
11. REPLACE VARIABLE-SPEED FAN.
12. REPLACE WATER PUMP.
13. SOLDER MINOR LEAKS IN RADIATOR.
14. TEST AND REPLACE COOLANT PRESSURE CAPS.
15. TEST AND REPLACE THERMOSTAT.

REPAIRING COOLING SYSTEMS

Diagram 2

DUTY STATEMENTS -

A. Organizing and Planning

B. Supervising

C. Evaluating and Inspecting

D. Training

E. Performing Maintenance Control Functions

F. Performing - Engine Overhaul Activities

G. Maintaining and Repairing Power Trains

H. Maintaining and Repairing Automatic Transmissions

I. Maintaining and Repairing Electrical Systems

J. Maintaining and Repairing Fuel Systems

K. Maintaining and Repairing Cooling Systems

L. Maintaining and Repairing Standard and Power Steering Units

M. Maintaining and Repairing Braking Systems

N. Maintaining and Repairing Front Ends

O. Maintaining and Repairing Automobile Air Conditioners

P. Maintaining and Repairing Automobile Heaters

Q. Lubricating and Maintaining

Diagram 3

Several considerations must be kept in mind constantly when constructing, reviewing, and editing the task statements. First, the purposes to be served by the information collected. Second, the individual whose job is being surveyed and who will complete the inventory. Third, the format to be used so that the data can be easily processed using electronic computers.

Diagram 2 displays several examples of task statements written according to the format just described. Note how the task statements are organized alphabetically, enabling the person responding to the list to easily observe whether all those tasks he performs related to each action word are included on the list. The Air Force task inventory analysis techniques offer several advantages over other task analysis and occupational survey techniques.

First, the technique is economical. Data can be collected from hundreds of workers in an occupational field for less than it would cost to collect the data from a few cases using professional job analysts.

Secondly, the information collected is quantifiable. The number of people performing any given task can be counted and their characteristics described.

Since the data collected by task inventories is quantifiable, it may be stored, manipulated, analyzed, and recorded by computer. The results of the inventory can be validated and checked for stability using conventional statistical techniques.

The technique yields information that is accurate. Workers do not inflate their job descriptions in terms of the number or difficulty levels of tasks reported. There is a high probability that significant tasks missing from the inventory will be written in by workers who perform them.

The task inventory analysis procedure utilizes the features of conventional survey methods for constructing and validating occupational analysis. This procedure includes the following steps. First, is the location of initial sources of task statements by searching publication indexes, catalogs, and other standard references. The results of other job analysis and curriculum guides are good sources of initial task statements.

The next step is to construct the preliminary task inventory. This is done by merging all the initial task statements that have been identified by the literature search. At this point only the duplicate task statements are removed from the total list. Tentative duty categories are identified and each task statement is placed under the appropriate duty heading.

Next, the preliminary task inventory is reviewed by consultants from the occupational area to be surveyed. The consultant review is accomplished with a face-to-face interview with each consultant. At least four consultants should be used for each task inventory. Generally, no more than six will be needed. During the interview of the consultant, the interviewer will read each task statement aloud and ask leading questions about it. Examples of the types of questions to ask are: Is the task statement clear? Will everyone understand what this means? Is the task covered by a previous task statement in the inventory? Does this task fit better under another duty? Are there any other tasks which should be included under this duty heading? Is the task performed in your business? The preliminary task inventory is revised, based on the consultants' comments and recommendations for changes or additions to the duty and task statements. Once the task inventory has been revised, a sample of workers is selected to respond to the inventory. Conventional sampling techniques are used in order to obtain representative samples of workers.

The revised job inventory is administered to the workers. The workers report items of identification, background information, duties and tasks they perform, the relative amount of time they spend on these activities, and other information asked for.

The workers are given the following instructions for responding to the task statements. They are asked to carefully read each of the task statements and place a check mark in the column labeled check for each task which they perform on their present job. After checking all the tasks they perform they are then asked to rate the tasks they have checked by placing a number from one to seven in the column labeled "Time Spent" which most closely estimates the amount of time they spend in performing the task. Time spent means the total time they spend on each task they are rating compared with the time they spend on each of the other tasks they perform. Space is also provided at the bottom of the page and the respondents are instructed to write in and rate any tasks they do which are not listed. For example: they are asked to compare with the other tasks they do on the job the time spent on each task rated: 1 = very much below average; 2 = below average; 3 = slightly below average; 4 = about average; 5 = slightly above average; 6 = above average; 7 = very much above average.

Diagram 4 is an example of how the respondent might fill out a page from the inventory: checking the tasks he performs, writing in an additional task that was not included on the inventory, and rating those tasks he has checked.

The completed task inventory booklets that are received from the worker sample are scanned and coded for data processing. This includes recording all additional tasks that have been written in by workers filling out the inventory.

Example:

AUTOMOTIVE MECHANICS TASK INVENTORY	Page 19 of 23 Pages	
LISTED BELOW ARE A DUTY AND THE TASKS WHICH IT INCLUDES. CHECK ALL TASKS WHICH YOU PERFORM. ADD ANY TASKS YOU DO WHICH ARE NOT LISTED, THEN RATE THE TASKS YOU HAVE CHECKED.	CHECK	TIME SPENT
M. MAINTAINING AND REPAIRING BRAKING SYSTEMS	✓ If Done	1. Very Much Below Average 2. Below Average 3. Slightly Below Average 4. About Average 5. Slightly Above Average 6. Above Average 7. Very Much Above Average
1. Repair master cylinder		
2. Repair wheel cylinder	✓	7
3. Replace brake hoses and lines	✓	1
4. Replace brake shoes	✓	6
5. Resurface brake drums		
6. Adjust brakes	✓	7

Diagram 4

Next, the data is analyzed with the aid of the computer. Job descriptions for each job title included in the survey can be generated. Also, different descriptions, indicating the difference in the tasks performed by groups of workers, can be printed.

And finally, the task inventory is again revised, based on the results of the survey. Tasks written in by incumbent workers are also added to the inventory.

Next, let us consider the type of data obtained from the survey. We can get summaries of the background data describing the characteristics of the worker sample. We can also get task job descriptions indicating the percent of respondents performing each task. These may be computed for the total occupational area and also for any specific job title desired.

Diagram 5 shows the format of a typical job description, this one being for computer console operators. The total number of respondents included is 54, as indicated by the N = 54 in the parentheses. The column headed "D-TSK" refers to the original location of the task on the task inventory. The letter referring to the duty under which the task was listed and the number referring to the rank of the task under the duty. As indicated by the column heading, the tasks are ranked by the percent of members performing with the most frequent task listed first.

We are also able to compute percent of time spent ratings based on the time spent ratings given by the workers. In computing the time spent ratings, it is assumed that the total of the respondents' ratings equals 100 percent of his work time. Therefore, each rating is expressed as a percent of that total. To convert an individual's raw rating to a percent, the following formula is used. A respondent's single task rating is divided by the sum of his total ratings and multiplied by 100. Let me again emphasize that the relative time spent ratings are just that: they are relative and no absolute values should be assumed.

Diagram 5 shows the average percent time spent by members performing as well as the percent of members performing data. The average percent time spent by members performing is derived by computing a mean time spent for those members performing. The diagram also indicates the average percent of time spent by all members. This column differs from the average percent time spent by members performing only in that the total number in the sample or job description was divided into the sum of the time spent ratings to obtain the figures shown. The fourth column shown is simply a cumulative sum of average percent time spent by all members. This column is a cumulative sum of column 3. From this column we can identify those tasks that account for any given percent of the time of the sample.

TASK JOB DESCRIPTION FOR COMPUTER CONSOLE OPERATOR (N = 54)

			CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	PERCENT OF MEMBERS PERFORMING
Ranked by . . .						↓
D-TSK		TASK TITLE				
H	6	Load programs and data cards	4.05	4.38	4.05	92.59
H	4	Determine cause of machine stops and malfunctions	6.78	3.06	2.72	88.89
H	15	Operate console	10.42	4.10	3.65	88.89
H	13	Operate card reader	13.70	3.84	3.27	85.19
H	46	Set up computer for operation	17.05	3.94	3.35	85.19
H	44	Select and mount tapes	20.43	3.97	3.38	85.19
H	43	Select and mount disks	23.25	3.39	2.82	83.33
H	28	Perform card-to-printer operation	25.50	2.76	2.25	81.48
H	35	Perform tape-to-printer operation	28.03	3.18	2.53	79.63
H	21	Operate magnetic tape unit	31.17	3.94	3.14	79.63
H	20	Operate key punch machines or verifiers	34.89	4.67	3.72	79.63
H	7	Locate tapes in storage media or tape library	37.18	2.88	2.29	79.63
H	40	Review processing steps before job is put on computer	39.92	3.53	2.74	77.78
H	29	Perform compilation or assembly	41.99	2.73	2.07	75.93
H	26	Operate sorter	44.20	2.91	2.21	75.93
H	31	Perform operator maintenance on automatic data processing equipment	46.23	2.68	2.03	75.93
H	2	Analyze machine operation through use of messages received from the equipment	48.65	3.18	2.42	75.93
H	32	Perform punched card-to-tape conversion operation	50.49	2.62	1.84	70.37
H	38	Prepare special carriage control tapes	51.85	1.92	1.35	70.37
H	3	Analyze machine operation through use of conditions displayed	54.00	3.14	2.15	68.52
H	42	Screen reports, cards, or programs for obvious errors and initiate correction	55.80	2.63	1.80	68.52
H	8	Maintain card files (source object, etc.)	57.53	2.59	1.72	66.67
H	19	Operate interpreter	59.15	2.51	1.63	64.81
H	16	Operate decollator	60.87	2.73	1.72	62.96
H	9	Maintain current run tapes	62.63	2.80	1.76	62.96
H	12	Make switch settings	64.34	2.79	1.71	61.11
H	1	Analyze job steps to determine data recovery points	65.55	2.04	1.21	59.26
H	33	Perform tape-to-card conversion operation	66.87	2.31	1.33	57.41
H	18	Operate forms bursting equipment	68.21	2.40	1.33	55.56
H	25	Operate reproducer	69.22	1.82	1.01	55.56
H	30	Perform debugging runs	70.48	2.34	1.26	53.70
H	39	Record time log for unscheduled maintenance	71.71	2.38	1.24	51.85
H	10	Maintain levels of data processing supplies	72.89	2.27	1.18	51.85
H	14	Operate collator	74.14	2.51	1.25	50.00
H	36	Prepare control decks	74.93	1.78	0.79	44.44
H	41	Schedule sequence of users during shift for effective organization of run	76.25	3.09	1.32	42.59
H	5	Interrogate memory locations on the console	77.15	2.11	0.90	42.59
H	54	Wire control panels	78.06	2.15	0.91	42.59
H	50	Strip tape and add new load point	78.71	1.60	0.65	40.74
H	55	Wire reproducer control panels	79.46	1.93	0.75	38.89
F	22	Operate office machines	80.23	2.18	0.77	35.19
H	11	Maintain technical files on equipment operation and procedural change	80.94	2.13	0.71	33.33
H	37	Prepare service action requests	81.57	2.02	0.64	31.48
H	47	Splice magnetic tape and leaders	81.93	1.13	0.36	31.48
H	52	Update current source programs	82.40	1.59	0.47	29.63
H	17	Operate document writer	83.16	2.55	0.76	29.63
H	23	Operate punched card accounting machines	83.65	1.79	0.50	27.78

Diagram 5

DIFFERENCE DESCRIPTION

GROUP 1 = DATA PROCESSING MANAGERS
GROUP 2 = DATA PROCESSING SYSTEMS PERSONNEL

D-TSK	TASK TITLE	PERCENT PERFORMING, GROUP 2	PERCENT PERFORMING, GROUP 1	DIFFERENCE IN PERCENT PERFORMING GROUP 2 MINUS GROUP 1
C 4	Coordinate scheduling of machine work load	66.67	5.88	-60.78
C 20	Plan and schedule work assignments for operators	63.33	4.41	-58.92
C 11	Evaluate work performance of operators	63.33	5.88	-57.45
C 34	Supervise data processing machine operators	58.33	1.47	-56.86
C 12	Inform person of prime responsibility of repeated errors in input data	70.00	14.71	-55.29
C 19	Plan and schedule duty assignments for data automation activity	55.00	1.47	-53.53
A 15	Plan and schedule data services work assignments	61.67	8.82	-52.84
C 30	Schedule basic input into automated data systems	53.33	2.94	-50.39
C 23	Prepare recommendations for improved efficiency in automatic data processing equipment operations	65.00	14.71	-50.29
C 33	Supervise apprentice data processing machine operators	50.00	0.00	-50.00
A 11	Monitor the meeting of deadlines	70.00	20.59	-49.41
A 12	Notify person of prime responsibility of deadlines	63.33	14.71	-48.63
A 7	Evaluate work performance of data services personnel	61.67	13.24	-48.43
C 15	Monitor the maintenance of utilization logs on automatic data processing equipment	56.67	8.82	-47.84
A 13	Order data automation supplies and equipment	51.67	5.88	-45.78
A 23	Supervise operation of punched card or tape filing systems	50.00	4.41	-45.59
C 1	Control tape utilization and assignment	46.67	1.47	-45.20
C 17	Plan and conduct on-the-job training in data processing equipment operations	50.00	5.88	-44.12
C 32	Schedule machine inspection and repair	46.67	2.94	-43.73
C 22	Prepare operating instructions concerning local reports	53.33	10.29	-43.04
A 22	Supervise distribution of reports or programs	53.33	10.29	-43.04
C 18	Plan and conduct on-the-job training in data processing procedures	50.00	7.35	-42.65
C 3	Coordinate one time report requirements with person of prime responsibility	63.33	22.06	-41.27
C 31	Schedule basic input into manual data systems	41.67	1.47	-40.20
C 35	Supervise data processing machine supervisors	40.00	1.47	-38.53
C 27	Requisition supplies	40.00	1.47	-38.53
C 13	Maintain operating manuals and directives affecting machine room function	51.67	13.24	-38.43
A 16	Plan facility modification	48.33	10.29	-38.04
C 16	Perform periodic inspections of data automation activities	41.67	4.41	-37.25
C 7	Develop computer operating instructions	63.33	26.47	-36.86
A 6	Establish data services production controls and standards	50.00	14.71	-35.29
C 5	Coordinate with programmers and systems personnel on matters of joint interest	61.67	26.47	-35.20
C 2	Coordinate errors in programming logic with programmers	58.33	23.53	-34.80
A 14	Perform automatic data processing equipment financial planning	40.00	5.88	-34.12
A 17	Prepare or audit personnel records	36.67	2.94	-33.73
C 26	Requisition auxiliary data processing equipment such as decollators or forms bursters	33.33	0.00	-33.33
C 10	Evaluate performance history on specific jobs	41.67	8.82	-32.84
A 19	Schedule input from person of prime responsibility	41.67	8.82	-32.84
F 32	Schedule computer runs for several days or more in advance	40.00	7.35	-32.65
A 18	Review machine run reports for accuracy	51.67	19.12	-32.55
A 4	Conduct on-the-job training for data services personnel	48.33	18.18	-32.16

Diagram 6

Another type of data that can be computed is the difference description as shown for data processing managers and data processing systems personnel in Diagram 6. The three columns show the percent performing for each group and the difference in the percent performing, noting that the first task listed, "coordinates scheduling of machine work load," is performed by 66.67 percent of the systems personnel and only 5.8 percent of the managers. This shows 60.78 percent more performance by the systems personnel.

I've just shown you a couple of examples so that you can be aware of what can be done with this type of data. Now let us discuss some of the uses of the task data.

First, job descriptions can be developed and validated to determine what different jobs exist, this relation to each other, and what the incumbent of each job is required to do. Detailed job descriptions can be developed for all job types within the occupational area.

Secondly, the data can be used to determine job differences in relationships to be used in identifying and structuring the specific jobs into career ladders and career fields, thus identifying job clusters.

Third, the data can be used to determine training which can be reduced or eliminated. Obsolete subject matter can be identified and removed from existing curricula.

Also, critical tasks that could be taught in a vocational or technical program can be determined. The critical tasks that should be included in an occupational competency and certification test can be identified. And finally, the job descriptions that are validated serve as valuable counseling aides to help students get reliable perceptions of occupations.

These are probably only a few of the potential uses should this type of valid and reliable occupational performance data be available for use by vocational educators.

PART V

Issues in Leadership Development for Occupational Education in the Community-Junior Colleges

Session Chairman

Ron Daugherty

ISSUES IN LEADERSHIP DEVELOPMENT FOR OCCUPATIONAL EDUCATION IN THE COMMUNITY-JUNIOR COLLEGES

Group Discussion Summary Report

Group Leader: Lee G. Henderson*
Reporter: Fred L. Wellman**

Introduction

During the afternoon session of January 11, 1972, participants of the national seminar identified critical issues which they deemed important in the development of vocational and technical education at the post-secondary level. The group identified the issues for the purpose of supplying future direction to those addressing the problems of post-secondary vocational-technical education. The issues have been categorized into four general areas as follows:

1. Personnel Development

   a) How realistic are "academic" standards in teacher preparation for occupational technical faculty?

   b) Retraining of the post-secondary faculty in career education approaches.

2. Cooperation in Federal and State-Level Administration of Vocational-Technical Education

   a) There needs to be a meeting between state directors of vocational-technical education and state directors of community colleges to discuss common problems.

   b) The U.S. Office of Education (both vocational-technical and higher education bureaus) should take the leadership in assisting state directors of vocational education and

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state directors of community colleges to jointly consider problems common to both administrators as related to post-secondary vocational-technical education.

c) Means need to be developed to open communications with other groups such as chief state school officers, state higher education executive officers, the National Association of Manufacturers, the National Chamber of Commerce, etc., in discussing post-secondary vocational-technical education.

d) Further consideration should be given to the problem of vocational education master planning for states and lack of involvement of some community college educators in this process.

e) Consideration should be given to determine whether federal funds should be widely distributed or concentrated in a few pilot demonstration vocational-technical education programs.

f) Consideration should be given to a more efficient and effective way of determining the effects of proposed state and federal legislation as it relates to vocational-technical education.

g) It is essential that studies be conducted to identify the change agents in community colleges in states.

3. Vocational-Technical Education Planning and Funding

a) There is considerable need for a systematic plan to gather and present data necessary in effective delivery and planning systems for vocational and technical education at the post-secondary level.

b) Consideration should be given to techniques and methods for stimulating community college administrators to develop more short-term training programs as opposed to the normal two-year associate degree programs for vocational and technical education.

c) An effort should be made to coordinate the "model building" efforts for post-secondary vocational-technical education being developed by research and development centers throughout the nation.

d) Additional emphasis needs to be placed on the efforts to secure increased federal funding for operating vocational-technical programs, including a fair distribution of existing funds through the post-secondary-level institutions.

e) There is a need for further discussion and consideration of capital outlay projects and needed construction funds in the areas of vocational-technical education.

4. Career Education

a) In developing models of career education, emphasis should be placed on extending the models from kindergarten through grade 16. Ways of extending existing model development efforts to include the post-secondary level is essential.

b) Further consideration should be given to the attitudes of the general public that may develop toward career education and have implications for future diffusion efforts in this area.

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APPENDIX A

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Wayne Schroeder - Dissemination Specialist

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APPENDIX B

Program

NATIONAL SEMINAR FOR STATE DIRECTORS
OF COMMUNITY-JUNIOR COLLEGES

January 9-10-11, 1972 -- Christopher Inn, Columbus, Ohio

SUNDAY	January 9 -- 7:30 - 9:30 p.m.	Registration	Hotel Lobby	
MONDAY	January 10 --	Morning Session Chairman--Carrol deBroekert (Oregon)		
	8:00 - 8:30	Registration	Hotel Lobby	
	8:30 - 9:00	"Welcome and Introduction to The Seminar"	Suite B	Speaker Robert E. Taylor
	9:00 - 10:00	"Improved Communications in State Administration of Vocational Education"	Suite B	Speakers S. V. Martorana John E. Snyder
	10:00 - 10:15	Coffee		
	10:15 - 11:00	"Reaction to Communications Topic" 2 small group sessions	Pool Lounge Suite B	Leaders S. V. Martorana John E. Snyder
	11:00 - 11:15	Discussion Reports	Suite B	Reporters S. V. Martorana John E. Snyder
	11:15 - 12:00	~~R&D Report~~ "Comprehensive Information System for Occupational Education" (CIS)	Suite B	Speaker Paul V. Braden
	12:00 - 1:15	Lunch (individually arranged)		
MONDAY	January 10 --	Afternoon Session Chairman--John C. Mundt (Washington)		
	1:15 - 2:30	Program Articulation "High School--Community College" "Proprietary School--Community College" "Baccalaureate Degree--Community College"	Suite B	Speakers F. Dean Lillie William Goddard Louis W. Bender
	2:30 - 3:15	"Reaction to presentations on articulation" - 3 small group sessions	Pool Lounge (sunken area) Pool Lounge (pool side) Suite B	3 Session Leaders F. Dean Lillie Louis W. Bender William Goddard
	3:15 - 3:35	Coffee		

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	3:35 - 3:50	Discussion Reports	Suite B	Reporters F. Dean Lillie Louis W. Bender William Goddard
	3:50 - 4:30	R&D Reports "Highway Safety" "Occupational Information for Curriculum Design and Revision"	Suite B	Speakers Ron Daugherty Frank C. Pratzner and John Joyner
MONDAY	January 10 -- Evening Session			
	5:30 - 6:30	Hospitality Hour	Suite A	Sponsor Brodhead-Garrett Tom Rogers (representative)
	7:00 - 9:00	Banquet Toastmaster Presentation of Speaker Speaker -- "Career Education and the Community-Junior College"	Suite B	Richard E. Wilson Albert J. Riendeau Robert Worthington
TUESDAY	January 11 --	Morning Session Chairman--Dale C. Schatz (Missouri)	The Center Auditorium	
	8:00 - 8:30	Travel from hotel to The Center		Method O.S.U. Bus
	8:30 - 9:15	"The Center for Vocational and Technical Education"	Auditorium	Speaker Kenney E. Gray
	9:15 - 9:45	"Career Education--an Educational Concept"	Auditorium	Speaker Keith R. Goldhammer
	9:45 - 10:15	Coffee with The Center staff		
	10:15 - 11:00	R&D Report "School Based Comprehensive Career Education Model"	Auditorium	Speaker Bruce Reinhart
	11:00 - 11:45	Reaction to Career Education	Auditorium	Panel Bruce Reinhart Keith R. Goldhammer
	11:45 - 1:30	No host group luncheon and travel to hotel - Terrace Dining Room, The Ohio Union		Method O.S.U. Bus
TUESDAY	January 11 --	Afternoon Session Chairman--Ron Daugherty (The Center)		
	1:30 - 2:00	Hotel checkout		

2:00 - 2:30	"Critical Issues in Leadership Development for Occupational Education in the Community-Junior College"	Suite B Pool Lounge	Leaders Fred L. Wellman Lee G. Henderson
2:30 - 2:40	Discussion Reports	Suite B	Reporters Fred L. Wellman Lee G. Henderson
2:40 - 3:00	"Summary of Seminar"	Suite B	Speaker Richard E. Wilson
3:00 - 3:15	"Reimbursement Procedures and Evaluation of Seminar"	Suite B	Coordination Seminar Staff

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